An Address
ON
CERTAIN FORMS OF JAUNDICE CAPABLE OF RELIEF OR CURE BY SURGICAL TREATMENT,
WITH A CONSIDERATION OF THE OPERATION OF CHOLECYSTENTEROSTOMY BASED ON AN EXPERIENCE OF 64 CASES.

Delivered before the North London Medical and Chirurgical Society on Jan. 14th, 1909,

BY A. W. MAYO ROBSON, F.R.C.S. ENG.

GENTLEMEN,—It is now generally recognised that the symptom of jaundice is in the vast majority of cases due to a mechanical obstruction in some part of the biliary tract, either within the liver or external to it. If the obstruction is within the liver it is seldom complete, as is well shown in certain cases of hepatic cancer, in which nodules of growth block some channels and leave others free, and in cirrhosis of the liver, where the partial obstruction to the ducts is sufficient to cause some back pressure. If the obstruction is external to the liver and in any place between the duodenum and the point at which the cystic and hepatic ducts join to form the common bile-duct, it is usually possible to relieve the jaundice and in some cases to cure the cause by cholecystenterostomy, an operation which has a considerable sphere of usefulness in a very trying class of cases. The causes of jaundice in this region may be (1) gall-stones in the common duct; (2) interstitial pancreatitis; (3) cancer or other tumour of the common bile-duct or of the papilla or of the duodenum near it; (4) cancer of the head of the pancreas; (5) cicatricial stenosis of the common bile-duct from the healing of an ulcer due to gall-stones that have passed; (6) cicatricial stenosis of the papilla owing to the healing of a duodenal ulcer; (7) pressure from without, as in cancer or ulcer of the pylorus or inflammation or growth of the lymphatic glands in close proximity to the bile-duct; or (8) obstruction of the common duct by hydatid cysts or hydatid membrane. Other rare conditions might be mentioned, but for practical purposes we may say that causes 1, 2, 3, and 4 constitute a large percentage of cases of obstructive jaundice where the cause affects the common bile-duct and in which the operation that I am about to consider can be of any service.

It will be noticed that I have said nothing of obstruction in the main hepatic duct, since it is beyond my subject this evening, as cholecystenterostomy in that case is powerless to relieve. I may, however, remark that if the obstruction be due to growth of the hepatic duct the jaundice rapidly becomes intense and no bile can either pass into the gall-bladder or common duct, whereas when it is due to gall-stones there is usually some bile in the motions and the jaundice may vary from time to time. In obstruction due to cholelithiasis the condition is curable by removal of the cause, the operation being not more difficult than ordinary choledochotomy, as I have proved in a considerable number of cases.

With very few exceptions common duct cholelithiasis is not a condition in which short-circuiting the obstruction should be employed, as the cause is capable of radical cure by means of a direct operation which under improved technique is most successful, as I can testify by an experience of about 200 operations, which in the last 150 have resulted in the recovery of 97 per cent. of all cases operated on. It will be seen, therefore, that short-circuiting the obstruction is the operation specially called for in two classes of cases only: (*a*) simple obstruction of the common duct by the presence of an inflamed or cirrhosed head of pancreas; and (*b*) obstruction due to growth in the duct or pressure on it by cancer of the head of the pancreas. As might be conjectured by the use of the term simple and malignant, the results both immediate and remote differ very much in these two classes; for in the one, operation is comparatively safe and usually results in complete restoration to health, whereas in the other, operation is attended with more immediate risk, and at the best life can only be prolonged for a period of a few weeks or at the most a few months.

As the results of the operative treatment of chronic jaundice differ so much according to the cause of the obstruction it may reasonably be asked, Is it possible to say beforehand in any case of chronic jaundice what is likely to be found when the abdomen is opened so that a probable prognosis may be given to the patient or his friends?

With regard to gall-stones in the common duct and interstitial pancreatitis the diagnosis can usually be made, though it is not always practicable to exclude the possibility of malignant disease having supervened as a later manifestation. It is also usually possible to diagnose cancer of the head of the pancreas; but even here, as well as in cancer of the common bile-duct and papilla, there is still great room for improvement in diagnosis.

So long as gall-stones are in the gall-bladder or cystic duct there is nothing to prevent the bile passing down the common duct into the intestine. Jaundice is therefore absent in the greater number of cases of cholelithiasis, or if present is shown only by a slight icteric tinge in the conjunctivæ which is induced by catarrh spreading from the gall-bladder and cystic duct to the hepatic and common bile-ducts and to the pancreatic duct. Should gall-stones become impacted in the common duct, the passage of bile is obstructed and jaundice ensues and continues as chronic icterus. Intermittent jaundice may, however, occur if a small gall-stone floats up and down in a dilated common duct acting as a ball valve.

In deeply jaundiced cases a decision concerning operation is of great importance, since chronic jaundice too often indicates malignant disease; and not only do patients with cancer bear operations badly, but when jaundice is associated with it there is the same tendency to persistent oozing of blood from the wound after operation as there is to spontaneous hæmorrhage where no operative measures have been undertaken. Though this hæmorrhagic tendency may be checked by the administration of calcium lactate or chloride, there is a want of healing power and often feeble resistance to shock, rendering operation in these cases more serious than in ordinary gall-stone subjects.

The combination of the following symptoms is characteristic of the existence of gall-stones in the common duct, and is therefore valuable in distinguishing between this form of obstruction and that arising from malignant tumour alone: 1. Jaundice of varying intensity, deepening after each paroxysm, which may persist for months or even years. 2. Ague-like paroxysms, characterised by chill, sweating and fever, and followed by deepening of the pre-existent jaundice. 3. At the time of the paroxysm pains in the region of the liver with epigastric disturbance.

The diagnosis of chronic interstitial pancreatitis has to be made from gall-stones in the common duct, cancer of the head of the pancreas, and cancer of the liver and bile-ducts. From gall-stones the diagnosis is of no great importance, since the two diseases are often associated, and the treatment is in both cases surgical; nevertheless, a diagnosis of gall-stones may be made by the sequence of long antecendent history of spasms without jaundice, and after a time by recurring pains with increase of the icterus associated with ague-like attacks. The absence of tumour due to distended gall-bladder is more common in gall-stones than in chronic pancreatitis, though in the latter also the gall-bladder may be found contracted. In cholelithiasis there is a tendency to constipation, whereas in chronic pancreatitis the stools are bulky, pale, and greasy, and there is a tendency to frequent motions, sometimes described as diarrhœa. Although in pancreatitis there is usually less pain, at times the paroxysmal attacks may be equally as severe as in gall-stone seizures. The tenderness in cholelithiasis, however, will be over the gall-bladder, and in the former at the middle line where the swollen gland can sometimes be felt, especially if the examination is made under anæsthesia; moreover, the radiating pain in gall-stones is towards the right, and in pancreatitis towards the left or to the mid-scapular region. The presence of fat in the stools, especially of neutral fat, and of the pancreatic reaction in the urine are important diagnostic points.

In cancer of the head of the pancreas the onset is usually gradual and painless and the disease generally occurs later in life, usually after 50 years of age. It is preceded by general failure of health. When jaundice supervenes it becomes absolute and unvarying and is nearly always associated with tumour of the gall-bladder, which generally

attains a large size and shows no tenderness on manipulation. The liver enlarges from the biliary stasis, but there are no nodules to be felt. In some cases of cancer of the head of the pancreas a hard nodular tumour may be found on the inner side of the distended gall-bladder. Extremely rapid loss of weight and strength, with increasing anæmia, but without ague-like seizures, are very characteristic, and it is common for there to be an absence of fever with a slow, feeble pulse, and later, ascites with œdema of the lower limbs. The bulky pale motions contain a large amount of neutral fat but no stercobilin.

Cancer of the common bile-duct is not common, but when present may resemble, and is often associated with, gall-stones. When jaundice supervenes, which it does at an early stage, it persists and soon becomes absolute, not varying in intensity, as occurs in common-duct cholelithiasis. The liver enlarges and the gall-bladder distends, forming a distinct tumour. Pain may occur in paroxysms or may be absent. Blood destruction leads to anæmia and to a hæmorrhagic tendency. Later, ascites and biliary toxæmia supervene.

In cancer of the liver, the irregular enlargement, the nodular feel, the rapid deterioration of health, the less intense jaundice, and the absence of fever and paroxysmal pains will usually enable a diagnosis to be made. In some cases of jaundice, notwithstanding every care, a diagnosis will only be made by an exploratory operation, when cancer of the liver will be immediately recognised or any enlargement of the pancreas can be readily felt. Even if the tumour be small the head of the pancreas in cancer may be found to be hard and perhaps nodular, like scirrhus. If ascites be present the tumour will probably be malignant, though I have found ascites to be present with interstitial pancreatitis associated with cirrhosis of liver and to be cured by cholecystenterostomy and omphalopexy. The lymphatic glands in the lesser omentum may be enlarged in both cancer and chronic pancreatitis, but in the latter they will be discrete and soft, in the former hard and perhaps infiltrating. Adhesions are usually associated with chronic pancreatitis or with gall-stones but are generally absent in cancer.

The now well-recognised relation between gall-stone trouble and pancreatic disease would lead one to expect that jaundice would be a frequent accompaniment of diseases of the pancreas, but the symptom is by no means constant. The relation of the common bile-duct to the duct of Wirsung and to the head of the pancreas is generally the determining factor. If, as is the case in 38 per cent. of bodies, the common duct passes behind the head of the pancreas either an acute or a chronic pancreatitis, or even a cancer of the pancreas, may run its course without the appearance of jaundice; but if the common duct lies in a deep groove, or is imbedded in the head of the gland, as occurs in 62 per cent. of cases, either pancreatitis or growth of the head of the organ must necessarily compress the bile-duct and lead to jaundice of greater or less intensity. It may, perhaps, be only a coincidence, but it is noteworthy that in 62 per cent. of my cases of chronic pancreatitis associated with cholelithiasis, bile pigments were found in the urine before operation, and in 38 per cent. there was neither jaundice nor bile pigment in the urine. Chronic pancreatitis, not associated with the presence of gall-stones in the common duct, was accompanied by jaundice in 16 per cent. of cases, the icterus in these instances being due either to compression of the common duct by the swollen head of the pancreas or to an ascending catarrh from the duodenum, which simultaneously involved the pancreatic and biliary passages. In pancreatic calculus jaundice will occur if the stone lodges in the ampulla of Vater. Acute hæmorrhagic pancreatitis may be accompanied by jaundice, especially when it results from the impaction of a small gall-stone in the duodenal outlet of the ampulla of Vater.

Deep jaundice with a distended gall-bladder is significant of cancer of the head of the pancreas, whereas if the cause of the jaundice be gall-stones in the common duct the gall-bladder is nearly always contracted and cannot be felt. The jaundice met with in cancer develops without pain, slowly and insidiously, but steadily. As the cachexia increases the patient's skin assumes a ghastly slaty appearance in many instances, so that instead of the saffron yellow colour of cholelithiasis there is seen the so-called "black jaundice."

One of the most serious difficulties arising in connexion with the diagnosis of diseases of the pancreas is the differentiation of the jaundice due to cancer of the head of the gland from that occurring in chronic pancreatitis and common-duct cholelithiasis. A chemical examination of the fæces for stercobilin may in many instances afford very considerable assistance and supply valuable confirmatory evidence. Obstruction of the common duct in most cases of cancer of the head of the pancreas at the time they usually come under the observation of the surgeon is generally complete or almost complete and the fæces are therefore free from stercobilin or contain but faint traces. In common-duct cholelithiasis and chronic pancreatitis, on the other hand, it has been my experience that the obstruction is rarely complete, so that the fæces give a distinct, although often subnormal, reaction for stercobilin. In the table on p. 214 of "The Pancreas: its Surgery and Pathology" (Mayo Robson and Cammidge) it will be seen that 22 out of 24 cases of malignant disease of the pancreas gave no stercobilin reaction, in two traces were found, and in one only was there a well-marked reaction. In 18 cases of chronic pancreatitis with jaundice and obstruction of the common duct there was a well-marked reaction for stercobilin in all but six and in these six traces were found. Stercobilin was also present in the fæces of eight cases of common-duct cholelithiasis associated with jaundice but without affection of the pancreas, in considerable amounts in five, and in small quantities in three. These clinico-chemical investigations have all been made in association with Dr. P. J. Cammidge.

Clinically, it is often a matter of difficulty to differentiate chronic inflammation of the pancreas from cancer; but if the results of a complete examination of the urine and fæces carefully and conscientiously performed are considered in conjunction with the history and symptoms the chance of an erroneous diagnosis is materially reduced, even in those cases where the spread of the growth is giving rise to secondary inflammatory changes in the adjacent gland tissue. In my experience a characteristic "pancreatic" reaction in the urine has always been associated with evidence of disease of the pancreas at operation or post mortem in all cases where it has been possible to investigate the condition of the gland. Confirmatory evidence is also afforded by the way in which the reaction disappears in patients who have suffered from pancreatitis after steps have been taken to deal with the condition by operative means. Evidence is also afforded by the uniform manner in which gall-stones in a common duct passing through the head of the pancreas have been associated with a postive reaction in the urine, whereas when the duct has passed behind the pancreas the presence of calculi has not given rise to any reaction. A striking demonstration of the diagnostic value of the test was afforded by a case in which a patient who suffered from a duodenal growth gave no reaction when first examined but later gave a well-marked result, which was shown at operation to be due to an invasion of the pancreas by the growth.

The differential diagnosis of a primary growth of the bile passages is frequently a matter of difficulty. Even in cases in which one can definitely say that the symptoms are not due to impaction of calculi in the ducts it may be impossible to exclude malignant disease in adjacent organs, such as the head of the pancreas or the duodenum, the chief symptoms being commonly found both in cancer of the common bile-duct and also of the ampulla of Vater—viz., progressive emaciation and jaundice of painless origin, with enlargement of the gall-bladder. Impaction of a gall-stone in the common duct is usually indicated by a distinct history of biliary colic immediately preceding the onset of jaundice. Where, however, the cystic and common ducts are dilated as a result of the previous passage of gall-stones impaction of a calculus may occur without any great pain. On the other hand, obstruction due to malignant disease may be accompanied by attacks of pain resembling biliary colic. The distension of the gall-bladder which is practically the rule in obstructive jaundice, other than that due to gall-stones, may be absent owing to contraction of the gall-bladder following previous cholelithiasis. As time goes on and the case progresses it becomes obvious that the cause of the jaundice is malignant disease but in the early stages it is almost impossible in some cases to make a certain diagnosis. The difficulty can only be cleared up by an exploratory operation, which should be performed at an early period.

Having made a diagnosis of the obstruction which is causing the jaundice the question of treatment will arise. If the obstruction be due to gall-stones in the common duct their removal by choledochotomy should be performed and

subsequent drainage of the bile-ducts either through the gall-bladder or through the common duct is indicated, as the bile is infective and the gall-bladder and bile passages are usually inflamed, both of which conditions will be cured by efficient drainage. If the obstruction be due to an enlargement of the head of the pancreas dependent on interstitial pancreatitis it can usually be diagnosed when the abdomen is opened by the character of the swelling, which is craggy and nodular in cancer but lobulated and smoother, though possibly hard, in interstitial pancreatitis, and by the absence of enlargement of the lymphatic glands, or if they are enlarged by their being discrete and not massed. The bile-ducts must in any case be drained either by a cholecystotomy or a cholecystenterostomy.

The disadvantage of a cholecystotomy is that the drainage is merely of a temporary character, and in some cases of interstitial pancreatitis drainage is necessary over a longer period than the patient is willing to submit to the inconvenience of a biliary fistula, which is not only extremely inconvenient but also enfeebling, seeing that while the bile and possibly some of the pancreatic fluid are passing away through the fistula the patient's digestion is considerably interfered with and the appetite is seriously impaired; thus the general health suffers. I therefore prefer in such cases, when the gall-bladder is of sufficient size to permit of it, to drain the bile into the duodenum or jejunum by a short-circuiting operation known as cholecystenterostomy, which establishes a new channel for the bile, removes the jaundice, and, by relieving tension on the head of the pancreas, leads to a subsidence of the pancreatitis.

There are some cases in which, even with the abdomen opened, the hardness of the pancreas and the serious condition of the patient may suggest to the surgeon that he has to deal with a cancer of the head of the gland; in all such doubtful conditions I would recommend drainage to be established, and if possible by cholecystenterostomy, as in quite a number of such cases, even at the time doubtful, on which I have operated the ultimate issue has been a complete and permanent recovery.

What should be done if the exploration reveals cancer of the common bile-duct or of the head of the pancreas? In cancer of the common bile-duct, if the gall-bladder is sufficiently enlarged I would advise the performance of cholecystenterostomy either into the duodenum or into the jejunum, as this will afford relief to the jaundice with its many sequelæ, such as liver complications and infection and deterioration of the blood, and it will at the same time improve digestion, help nutrition, and probably prolong life and make it more endurable. In undoubted cancer of the pancreas I fear one cannot look for the same improvement, as in nearly all my cases of cancer of the head of the pancreas life has only been prolonged over a few months after jaundice has supervened, and even after recovery from operation the survival is usually not longer than it would have been had no operation been done. To this statement I have to mention some rare exceptions where not only life has been prolonged for a year or more, but where health has apparently been regained for a time and the patient has appeared really to enjoy the respite granted by a short-circuiting operation. Nevertheless I always feel that in operating on a patient suffering from definite cancer of the pancreas the risks of secondary capillary hæmorrhage or other complication make it questionable as to the wisdom of attempting anything further after the exploration has revealed the true state of affairs. The fact, however, that some cases of undoubted cancer of the pancreas have been relieved by operation and have lived in comfort for a considerable time must prevent one from being too dogmatic in absolutely condemning any attempt to relieve.

As cholecystenterostomy is the operation of choice in cases of jaundice due to obstruction of the common duct in which the obstruction cannot be removed, and as I have had considerable experience of the operation, I think it may prove of interest if I describe in detail the operation with its indications and contra-indications. Cholecystenterostomy consists in establishing an artificial opening between the gall-bladder and duodenum, jejunum, or colon, preferably the first. The indications for the operation are: (1) in jaundice due to interstitial pancreatitis; (2) in biliary fistula dependent on stricture or other permanent occlusion of the common bile-duct; (3) in jaundice due to stricture or tumour of the common bile-duct; and (4) in jaundice dependent on cancer of the head of the pancreas (?). The contra-indications are: (1) in any obstruction of the bile-duct such as gall-stones, which can be removed with a reasonable prospect of success; and (2) in contracted gall-bladder in which the operation is impracticable.

Preparation for operation.—As in all cases of obstructive jaundice, especially when the obstruction is dependent on disease of the pancreas, there is a tendency to hæmorrhage subsequently to operation, it is very desirable in operating on these cases to give lactate or chloride of calcium for two days previously to operation, and to give from 5 to 10 grains every day or every other day subsequently for the first few days. At the time of operation it is also desirable that every perceptible bleeding point should be ligatured. The day before operation an aperient is given so as to have the bowels well moved, and the patient is enveloped in cotton wool before being put on the table. I now always use a special table in these cases, which by means of a screw allows a portion of the table opposite the liver to be raised, thus pushing forward the spine and making the hepatic region prominent. This is more convenient than a sandbag or cushion which I originally advocated and employed for some years. The incision is a vertical one made through the outer border of the right rectus sheath, the rectus muscle being displaced inward and the posterior sheath and peritoneum being then divided together in a similar direction to the anterior incision, thus avoiding the division of any muscular fibres. If needful the incision can be prolonged obliquely upwards towards the interval between the ensiform cartilage and right costal margin. After exploring the bile-duct to ascertain that the cause is not removeable, the gall-bladder, if tensely distended, is emptied by a trocar. The fundus is then seized by curved forceps covered with rubber and at the same time the portion of bowel selected for anastomosis is brought forward and clamped in the same way. The intestine to select should either be the duodenum in the first or second part, according to which is more accessible, or if the duodenum is not available then the jejunum, which is readily found by passing the fingers beneath the transverse colon and feeling for the duodeno-jejunal flexure, when a point about 18 inches from it can be brought forward and clamped. The two clamped viscera are closely apposed and between and beneath them is placed a gauze swab, the whole area of operation being surrounded by sterilised gauze. An anastomosis is then made by two continuous sutures, one of Pagenstecher's thread or thin silk, which unites the serous membranes one-third of an inch away from the point of anastomosis, and another of thin chromic catgut which unites the margins of the opening between the viscera. I usually make the opening about half or three-quarters of an inch in length. When the union is effected, which can be done with very little disturbance of viscera, the gauze is removed and the abdomen closed by a continuous No. 3 iodised catgut suture which first picks up the peritoneum and posterior aponeurosis and is afterwards continued backwards, picking up the anterior aponeurosis until it reaches the point of starting. Two or three silkworm gut sutures are passed through the skin and the anterior aponeurosis and tied quite loosely, these being merely precautionary sutures in case of delayed union. The skin margins are then brought together by Michel's clips. Since adopting this method of operating, together with the precautionary treatment mentioned, I have been very little troubled by the complication of post-operative hæmorrhage in jaundiced cases.

It will be noticed that I have mentioned the desirability of uniting the jejunum where the duodenum is deeply placed and difficult to manipulate, and I have done this advisedly, as I do not think that it is desirable in deeply jaundiced patients to mobilise the duodenum since there is a fear of trouble from hæmorrhage in such cases if extensive intra-peritoneal adhesions have to be separated; moreover, this prolongs the time of operation and tends to produce more shock than is desirable in this class of cases.

In my first case of cholecyst-jejunostomy at the same time that I united the jejunum to the gall-bladder I also short-circuited the loop of jejunum so as to avoid any possibility of kink, and this is desirable if the gall-bladder is small and the jejunum in danger of being kinked, but as a routine precedure the entero-anastomosis is not absolutely necessary.

Another operation has been suggested of dividing the jejunum, uniting the distal end with the gall-bladder and anastomosing the proximal end into the distal at a lower level, but it seems to me that this is an unnecessarily severe procedure and not to be recommended.

In the first case of cholecystenterostomy that I performed so far back as 1889 I connected the gall-bladder to the colon, and in that case, as also in others on which I have operated since, the anastomosis has acted very well. It is quite a simple matter to connect the gall-bladder to the colon, but as I have heard of several cases elsewhere in which suppurative cholangitis has occurred subsequently to cholecystenterostomy I no longer think it safe to perform it and cannot recommend it except in desperate conditions where time is a very great object, but even then it is doubtful, as the time saved is quite inconsiderable.

It has also been suggested, and in fact carried into practice in a number of cases, to connect the gall-bladder to the stomach. Arguing from experimental evidence as well as from cases that have been reported, the bile in the stomach does not seem to do much harm, but I cannot think it a rational procedure deliberately to drain the bile into the stomach when other means are available, and personally I prefer to connect the gall-bladder either to the duodenum or jejunum.

My experience of cholecystenterostomy extends to 64 operations, many of these undertaken in patients desperately ill and suffering from deep jaundice of some duration. Of these 49 were in non-malignant cases, chiefly interstitial pancreatitis simple or complicated, and of these 47 recovered, thus yielding a rate of mortality of 4 per cent. Of the two patients that died, one had also cirrhosis of the liver and developed an acute hæmorrhagic condition which ended in apoplexy and coma a few days after operation; the other, a lady advanced in age, developed sudden suppression of urine five weeks after operation when the wound had healed and she was apparently well.

The operation in malignant cases presents quite a different picture, for out of 15 cases only seven survived. My practical experience, therefore, bears out what I have already stated, that while the operation of cholecystenterostomy affords a reasonably safe and a highly satisfactory method of treating mechanical obstructions of the common bile-duct if of a simple character, yet if the disease can be definitely made out to be malignant the operation can only be of benefit in very exceptional cases.

From the large number of patients whom I have seen suffering from chronic jaundice that had failed to yield to medical treatment and whose lives I feel sure have been saved by operation, I feel that I am justified in urging—first, more exhaustive diagnostic efforts than are generally adopted in trying to elucidate what are usually difficult problems; secondly, as soon as a definite diagnosis of mechanical obstruction is made which reasonable medical treatment, not too prolonged, has failed to relieve, the question of surgical treatment should be considered, and at a time before serious blood changes have taken place and before the patient has arrived at that stage in which even an exploratory operation can only be undertaken at considerable risk.

NATIONAL TUBERCULOSIS CONFERENCE AND EXHIBITION.—The National Tuberculosis Conference and Exhibition is to be held at Caxton Hall, Westminster, on Feb. 16th, 17th, 18th, and 19th, and will be opened on successive days by Lord Carrington, President of the Board of Agriculture, Lord Kinnaird, the Lord Mayor, and the Mayor of Westminster. Two general sections chiefly devoted to the medical aspect will include lectures and discussions on communicability, diagnosis, prognosis, prevention and the various methods of treatment, including surgical, tuberculin, and x ray diagnosis of pulmonary tuberculosis. Other sections will deal with the milk problem, meat infection, sanatoriums—private and municipal, nursing, school life and buildings, breathing, &c. A veterinary section with practical demonstrations will be a special feature of the conference. There will be an exhibition of models, plans, diagrams, and photographs of all sorts of sanatoriums, as also of various food-stuffs, disinfectants, wearing apparel, and drugs. All further information and cards of admission may be obtained from the secretary, 12, Cavendish Mansions, Portland-place, W., enclosing stamped addressed envelope.

An Address
ON
EARLY CARDIAC INADEQUACY.

Delivered before the West Kent Medico-Chirurgical Society,

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GENTLEMEN,—Strictly speaking, the heart may be described as inadequate whenever any of Gaskell's five essential functions become impaired. These functions, as you know, are rhythmicity, excitability, conductivity, contractility, and tonicity, and from the large amount of excellent work which is now being done on the subject there is little doubt that we shall soon learn to express inadequacy in terms of the particular function primarily or chiefly affected. At present, however, such is the clinical importance of the function of tonicity that when we speak of cardiac inadequacy we imply that it is mainly this function which is at fault. The first result of impaired tonicity is dilatation, so that it is by the symptoms and signs of dilatation that we have to recognise that the power of the heart is no longer equal to its task of adequately maintaining the circulation. There are, of course, various degrees of dilatation, of which unfortunately our nomenclature in this country takes no cognisance. We are content to speak of dilatation or broken compensation without making any attempt to indicate the stage at which the process has arrived. The inconvenience of this is very apparent to readers of French medical literature. In France they distinguish two stages: the first they call hyposystole, the second asystole. The latter is universally acknowledged to be etymologically incorrect, but the term is retained because usage has not only sanctioned it, but has succeeded in attaching to it a meaning which is definite, unmistakeable, and invariable. A better term would be dys-systole, as suggested by Huchard.[1] Asystole, the absence of systoles, means death; whereas dys-systole means difficult or laborious systoles, and therefore conveniently expresses the condition which we call advanced dilatation or, in the case of a valvular lesion, broken compensation. This is the condition which was thus described by Maurice Raynaud in a passage which has become classical: "With his puffy face, sparkling eyes, widely dilated nostrils, and heaving chest, the unfortunate patient seems to be in a permanent condition of having just finished a close race. His lips, and even his cheeks, are livid; his pulse is imperceptible; the distended veins in his neck seem alive with ceaseless pulsations. His body is big with anasarca, his trunk is supported by several layers of pillows, and he passes whole days and nights with his legs dangling over the side of the bed. Though overcome with the desire for sleep, every effort to snatch a few moments of repose is in vain; for no sooner does he close his eyes than his head falls heavily on his chest and he awakens to renewed tortures. He is face to face with the cruel alternative of being overtaken by asphyxia or of enduring perpetual insomnia."

Merklen,[2] in analysing this pathetic and all too familiar picture, finds that it is characterised by four leading phenomena: "Continuous dyspnœa, which is the result of pulmonary stasis; increase of cardio-hepatic dulness, which proclaims the insufficient evacuation of the cardiac chambers; diminution in the quantity of the urine, which occurs as soon as the venous system becomes engorged at the expense of the arterial; and, finally, dropsy and cyanosis, which supervene as soon as the dilatation exceeds a certain limit." This "certain limit" marks the frontier between "asystole" and "hyposystole," for he goes on to define the latter as asystole without dropsy, a distinction which, though purely conventional, is of considerable clinical utility. But if we would really take time by the forelock we must learn to recognise degrees of hyposystole short of that which such a definition suggests. To

[1] Maladies du Cœur et de l'Aorte, vol. iii., p. 787, third edition.
[2] Leçons sur les Troubles Fonctionelles du Cœur, p. 64, edited by Dr. J. Heitz (Masson, 1908).

the seeing eye and attentive ear, danger-signals become recognisable long before the dyspnœa has become continuous, the liver enlarged, or the urine scanty, and the earlier we can recognise them the better for our patients. Individually these signals may appear unimportant and even when two or three are associated the combination may fail to carry conviction. In illustration of this I need not do more than remind you of the saying of that clear-sighted clinician Murchison[3] to the effect that all the symptoms of heart disease, with the single exception of cyanosis, could be produced by flatulent dyspepsia. Our knowledge of matters circulatory has advanced since Murchison's time (to-day it is advancing by leaps and bounds), and I have thought that it might be profitable to consider some of these signs and symptoms and to endeavour to estimate the value which they bear. Although it is by no means easy to detect hyposystole in its earliest stages the task is one which well repays the endeavour.

First, then, as to *dyspnœa*. Breathlessness accompanies so many disorders that it is impossible to do more than indicate vaguely the significance which it may bear in the present connexion. The dyspnœa of hyposystole is essentially a dyspnœa of effort. When quiet, and standing or sitting up, the patient experiences no inconvenience. No sooner, however, does he exercise his muscles in some slight exertion than he becomes breathless. More especially is this the case if the slight physical exertion is accompanied by an equally slight degree of mental anxiety—as when a man quickens his pace in order to catch a train. There is, however, nothing characteristic in this. It may be the result of many causes. If, however, it be truly cardio-vascular in origin it will generally be accompanied by a certain measure of what we may call potential orthopnœa, by which I mean a greater difficulty of breathing, as measured by the number of respirations, in the recumbent than in the upright posture. The degree of this potential orthopnœa is not striking; the patient will not complain of it, but there is seldom any difficulty in eliciting it on the couch. The two cardio-vascular conditions which are most likely to cause dyspnœa are (1) mitral disease, especially mitral stenosis, and (2) high arterial tension—hyperpiesis, as Sir T. Clifford Allbutt has christened it. Dyspnœa in mitral disease is accompanied by orthopnœa because the obstruction at the mitral valve causes a back pressure to be felt in the right auricle. A difficulty is therefore experienced in getting the venous blood away from the medulla as rapidly as before. When the patient lies down the flow of venous blood from the brain no longer has the assistance of gravity, and so the medulla hastens and deepens the respirations in order to increase the suction action of the lungs.

In hyperpiesis the mechanism is similar, though not identical. When the arteries are contracted the blood collects unduly in the veins, more especially in the veins of the splanchnic area. When the patient is up these veins act as a reservoir, but when he lies down the force of gravity tends to empty them into the right heart and onwards into the lungs. The pulmonary capillaries are thus suddenly called upon to deal with a larger quantity of blood; they become distended and encroach upon the air spaces, so that although there is a larger quantity of blood to be oxygenated there is less air space in which this may be effected. As soon as the patient sits up his abdomen once more becomes a reservoir and he breathes freely again. Where this recumbent dyspnœa is shown to be due to mitral disease we are in full sight of hyposystole, and unless decided steps are taken the compensatory process will quickly break down. Where the symptom is due to hyperpiesis—a fact which may be suspected by an accentuated second sound at the aortic base, but established only by a high manometric reading—the position, though fraught with anxiety, is by no means necessarily grave. The dyspnœa of slight exertion, then, especially when combined with "potential orthopnœa," should at once arouse suspicion that all is not well with the cardio-vascular apparatus and should lead us to pursue the investigation. There are some distinguished observers, among them Sir Clifford Allbutt himself, who hold that when once dyspnœa has become established the functional and curable stage of hyperpiesis is passed and that structural alteration in the arteries, in the kidneys, or elsewhere has already occurred. While admitting the importance to be attached to so definite a pronouncement from such a quarter, the facts of at least one of my cases permit me to take a more hopeful view, and I believe that under suitable dietetic and hygienic treatment all the symptoms of hyperpiesis, including the dyspnœa, may be induced entirely to disappear.

Palpitation is a symptom on the subject of whose value from a cardio-vascular standpoint there has been much discussion. Some writers contend that it is very common in all cardiac derangements, but the modern tendency is rather in the direction of belittling its significance. I think it would express the truth to say that although palpitation seldom indicates cardiac disease it invariably denotes cardiac distress. The distress may not arise in the heart itself; indeed, it seldom does, but whether the cause be in the nervous system, which is not rare, or in the stomach, which is common, or in the arterial system, which is commoner still, the trouble reacts upon, and shows itself in, the central organ. The part which the stomach plays in provoking palpitation is well known. That part is, as a rule, purely mechanical. When distended by flatulence the cardiac end rises up and pushes the diaphragm on to the heart, with the result not only that the movements of the latter are interfered with but that the organ itself is rendered irritable by unaccustomed contact. Hence it is that the patient becomes unpleasantly conscious of his heart and is aware of the fact that it is beating rapidly and even tumultuously. Such a cause is almost certainly in operation if the tympanitic note peculiar to the stomach rises as high as the sixth rib. Anatomically, of course, we know the stomach to reach that point (some put it even higher), but in its undistended state it is never accessible to percussion as high as the seventh rib, especially during inspiration, when the diaphragm descends and the lungs expand. A physical sign of this kind, then, not only displays the cause of the palpitation but points unmistakeably to its proper treatment. For the flatulence itself, pending the removal of its cause, oil of cajuput is almost a specific.

The other two most frequent causes of palpitation, the nervous and the arterial, are in reality the same. The "flutter of the heart," or more commonly the "flutter" of everyday speech is evoked, as we all know, by emotional causes, generally sudden. Now, such causes are among the most potent in giving rise to high blood pressure. The vaso-motor centre in the medulla is stimulated reflexly into ordering a sudden widespread vaso-constriction; the heart, taken unawares, is not prepared to cope with this abruptly induced and enormously increased peripheral resistance; it gets out of its stride, so to speak, with the result that its movements become obtrusive and disorderly. In so far as this kind of palpitation, which is common in neurotic women, requires drug treatment at all, it is to the nervine sedatives such as bromide and valerian rather than to digitalis and caffeine that an appeal should be made.

But unduly contracted arteries may very easily provoke palpitation in people whose nervous systems are in a perfectly stable condition, and such I believe to be the cause in the vast majority of cases of recurring and troublesome palpitation in the middle aged which are not stomachic in origin. Hyperpiesis we know to be a very insidious complaint. It begins quietly, it increases gradually, and even when it is well established it may fail to produce symptoms which will take its subject to the doctor. Even when it has been sufficiently long in existence to provoke organic disease, the patient's complaint is frequently the one which is made shamefacedly of "being out of sorts and wanting a tonic," or "having come more to please the wife than for any reason of his own," with which we are all familiar. A story of that kind in a man over 50 years of age always arouses my suspicions, and it never surprises me to find that the long continued and wholly unsuspected high arterial tension has done its inexorable work of producing granular kidneys, arterio-sclerosis, or aortic and coronary degeneration. Of the many indefinite discomforts which may beset such a person during the period when his high blood pressure is still functional and curable there are only two which are at all likely to cause him to seek advice. The one is dyspnœa, of which I have already spoken; the other is palpitation. I do not suggest that palpitation occurs only in the functional period: it is, on the contrary, a symptom which is liable to increase in severity as the disease advances from the functional to the organic; but it is frequently present in the

[3] Savill: A System of Clinical Medicine, vol. i., p. 40.

early stages, and it is the part of a prudent physician to attend to its warnings.

Palpitation I have ventured to define as a signal of cardiac distress. And inasmuch as it is pre-eminently the symptom which produces a fear of sudden death it may also be said to be associated with mental distress. When the heart, which may not originally have been a very powerful organ, is called upon to force the blood against an increased and ever-increasing peripheral resistance it is scarcely to be wondered at that it should from time to time falter, so to speak, and, in recovering, struggle. The faltering means, in all probability, a temporary loss of tone, a slight but acute dilatation, which is pregnant with hyposystolic possibilities for such as will take heed. On a question such as this the way to arrive at a conclusion, and it is the only way, is to use a manometer. The neglect to do so is to fail in an obvious and a pressing duty, and I take this opportunity of repeating my ever deepening conviction that to attempt to estimate degrees of blood pressure without the aid of a manometer is as farcical a procedure as would be an endeavour to determine the presence of albumin in the urine without the help of reagents.

A form of cardio-vascular disturbance which it is often very difficult to appraise at its true value is *tachycardia*. Setting aside nervous influences, which, though important, are too complicated to discuss at present, it may be laid down as a general rule that heart-hurry is more often due to arterial causes than to cardiac. We know, for Leonard Hill[4] has conclusively shown, that accelerated pulse-rate is the normal response on rising from the recumbent posture to the upright. We know that this acceleration varies in health between eight and 20 beats, and that if the difference becomes increased to 30 or 40 beats it means that there is a pronounced loss of tone in the walls of the systemic arteries. Hence we find heart-hurry in the upright posture, which subsides in the recumbent, as a common symptom in adolescents soon after puberty, in convalescence from acute or debilitating disease, in neurasthenia, and the like, and the manometer tells us that this condition is invariably associated with a subnormal blood pressure. In such cases, if it be looked for, albumin will almost always be found in the urine and will not infrequently trap the unwary into giving an alarming prognosis. Both the tachycardia and the albumin are in reality very amenable to treatment by drugs and a hygienic *régime* designed to impart additional tone to the peripheral arteries. This arterial tachycardia is a very common occurrence, and it is, especially when associated with albuminuria, all too commonly wrongly interpreted. The want of tonicity in the arterial walls is almost invariably accompanied by an equal, perhaps a greater, degree of relaxation in the cardiac walls; and we find, consequently, that the tachycardia of low blood pressure, though readily curable, may when neglected very easily lead to hyposystole.

Of somewhat different significance is the tachycardia which reveals itself only, or more especially, in the recumbent posture. When the patient is up his pulse-rate presents no abnormality, but when he is laid upon his back he immediately develops heart-hurry. This is the exact reverse of the normal response and involves, therefore, an interpretation which can only be expressed in pathological terms. The exact meaning of the phenomenon is not altogether clear. I was at one time content to accept Professor Huchard's teaching that when the normal difference between the pulse-rates in the two positions became abolished such abolition was caused by contracted arteries, giving rise to high blood pressure; and that, further, when the normal difference was reversed so that the number of beats recumbent exceeded those upright it indicated definite structural disease over a wide area, with pronounced and irremediable hypertension. I find myself no longer in a position to endorse this view, for not only have I seen a great number of people with high blood pressure whose postural response was perfectly normal, but I have also seen several cases with normal and even subnormal blood pressures whose postural response was not only abolished but actually reversed. It is therefore evident that an abnormal postural response, though it may occasionally own a cause which is primarily arterial, must also sometimes be due to a cause which is primarily cardiac. This cause I believe to be hyposystole. When a person passes from the upright to the recumbent posture there is, as we have already seen when considering orthopnœa, a considerable afflux of blood to the right heart. If the tone of the myocardium is defective the presence of this increased load will cause a dilatation, so that the organ, finding itself unable adequately to empty its chambers, increases the number of its contractions. When I now come across an abolition or reversal of the normal postural response I am led to suspect, not so much a state of arterial hypertension as a condition of impaired tone in the wall of the right ventricle and consequently commencing hyposystole. There is, of course, nothing to prevent these causes from being associated, which, indeed, they very commonly are.

A symptom which frequently escapes the attention which it deserves is *œdema* of slight degree. Pronounced degrees are, of course, seldom overlooked, but these do not appear until the hyposystole, or indeed the asystole, is already declared. To detect it in its earliest stage the patient must be going about. Towards the end of the day or after a long walk there will be slight, though definite, pitting over the tibia just above the ankles which disappears after a night's rest. During the period of repose, however, the urine which has been normal in quantity or scanty during the day shows a very decided increase, the explanation being, of course, that the tone of the heart, though inadequate to the exigencies of the erect posture, is nevertheless capable of fully maintaining the circulatory needs of the recumbent posture. The œdematous accumulation of the day is thus fully excreted at night. This "nycturia,"[5] as it has been called, is a reversal of the relations which normally subsist between nocturnal and diurnal micturition; for as a rule at least two-thirds of the total quantity is passed during the day. A diminution in the one and a large increase in the other should always lead one to search for œdema and other signs of commencing hyposystole. Œdema may, and frequently does, occur in very inaccessible places, in the internal organs, for example. When this is suspected the only method of arriving at a conclusion is by careful comparative observations of the patient's weight. If there is a gradual increase in this, and any suspicion of a decrease in the amount of the urine it is tolerably certain that œdema is present.

It is impossible nowadays to speak of œdema without reference to Widal's work[6] in connexion with its production by the undue consumption of common salt. In health, it would seem, any excess of chloride ingested is immediately discharged in the urine. In certain departures from health this discharge of the surplus does not take place and the chlorides are consequently retained. Now, the blood itself will not tolerate the presence of an excess of chlorides, so that the salts are immediately passed into the lymph spaces. Here they attract to themselves a quantity of water sufficient to make a solution isotonic with the blood plasma—a "normal saline," in fact—and œdema becomes established. This œdema, which is at first visceral and deep-seated, very soon becomes general, unless the ingestion of chlorides is greatly restricted. As soon, however, as this is done the œdema disappears. Although Widal's work has been abundantly confirmed by numerous observers it is not yet exhaustive in the sense that we are not yet fully acquainted with the nature of the departures from health in which this inability to deal with chlorides is liable to occur. Some of them, of course, are well recognised, especially those connected with the kidney. Quite recently, however, Professor Etienne[7] of Nancy has shown that cardiac enfeeblement is peculiarly liable to give rise to intolerance of chlorides and consequently to œdema, and he has shown that even in very old people a cardiac equilibrium which on an ordinary dietary was on the verge of breakdown can be completely re-established by the simple expedient of carefully regulating the amount of ingested chlorides.

The bearing of this upon our present inquiry is sufficiently obvious. In a person who takes more than 7 grammes (about 110 grains) of common salt per diem (which includes the vast majority) a very early sign of hyposystole will almost certainly be some measure of œdema; and, further, no treatment of hyposystole can be considered satisfactory which fails

[4] Schäfer's Physiology, p. 90.

[5] Huchard: Maladies du Cœur et de l'Aorte, vol. iii., p. 828.

[6] La Cure de Déchloruration (J. B. Baillière, 1906).

[7] Étude de la Chlorurie et la Diététique Hypochlorurée Méthodique dans la Cardiosclerose, leurs Applications à la Prophylaxie de l'Hyposystolie chez les Vieillards, Archives des Maladies du Cœur, March, 1908.

to include amongst its measures a scientific restriction of the intake of chlorides. The detection of slight degrees of œdema is not at all easy, and yet how comparatively common it is to find a slight degree of pre-tibial pitting if only we look for it, and how comparatively seldom we look for it, even when confronted with the tell-tale circular depression produced by the rim of the binaural stethoscope on the skin of the chest. I do not, pretend, of course, that either the one or the other necessarily spells œdema, but there can be no doubt that either, and especially both, proclaim a general laxity of the tissues in which it is almost certain that the myocardium partakes, and with an atonic myocardium we are certainly not far from œdema.

In the examination of the heart itself the question of its size is of paramount importance. I need hardly remind you that in so far as percussion at this stage is likely to yield us any information, such information must be sought by percussing carefully with a light stroke along the fourth right space from without inwards. It is only thus that commencing enlargement of the easily dilated right auricle will reveal itself. Where we have to deal with a patient in whom we have reason to believe the blood pressure has been unduly high for a period of several months a left ventricle which is normal in size is of bad prognostic omen. The undegenerated myocardium always rises to the occasion of persistent high blood pressure by a very definite measure of hypertrophy, and if in such circumstances the hypertrophy fails to make its appearance, it is quite certain that the myocardium has lost its responsive power and that, consequently, there are breakers ahead.

With regard to the sounds heard on auscultation it is unnecessary before such an audience to insist that gross valvular lesions with agitating thrills and clamorous murmurs are quite compatible with complete adequacy of function, and do not of themselves constitute any indication either for heroic treatment or for alarmist prognosis. Valvular lesions indicate necessarily a certain degree of cardiac crippling and therefore denote a handicap to the proper maintenance of tone; but we have to remember that in favourable circumstances the tone may, and often is, maintained for years in the face of what appear to be very serious obstacles; that what concerns us is not structural deformity so much as functional capacity, that, as the French put it, "une lésion d'orifice n'est pas une maladie de cœur."

Of sounds other than murmurs, the various kinds of arrhythmia are the most important, but inasmuch as arrhythmia is a disorder rather of conductivity than of tonicity, it does not come within the scope of the present survey. But even in the absence of gross murmurs and arrhythmia the attentive ear will frequently detect sounds which tell of dangers ahead. The first of these is the accentuation of the second sound as heard at the aortic cartilage which is so suggestive of unduly high blood pressure and an increased peripheral resistance before which, if it goes unremedied, the strongest myocardium will eventually be compelled to yield. Another is the reduplicated second sound at the apex, "the postman's knock," as Sansom[8] called it, which is now very generally admited to indicate an early stage of mitral stenosis. We must remember that a narrowing at the mitral orifice is never stationary; it proceeds, sometimes rapidly, more often slowly, but always inexorably, to the final catastrophe, so that this postman's knock is ever fraught with sinister meaning for its unfortunate possessor. Another important sign which not infrequently escapes attention is the approximation in time of the two normal sounds with consequent lengthening of the refractory pause. It is as if the heart, conscious of its feebleness, were endeavouring to lengthen the time allotted to rest and nutrition. The phenomenon, though often described, has never, so far as I know, been given a name. This is unfortunate, because names are important aids in recalling facts. This phenomenon is by no means rare in long and debilitating illnesses; it is common after influenza and other acute diseases, and whenever it occurs it constitutes an important indication for very special watchfulness lest the patient should overstep the limits of prudent convalescence.

There are some other signs of which a really exhaustive consideration of the subject would doubtless demand a notice. I should have liked, for instance, to discuss the matter from another point of view; to point out how hyposystole escapes recognition by concealing itself, so to speak, in various organs; in the lung as bronchitis, in the stomach as dyspepsia, in the bowels as sluggish liver, and in the uterus as menorrhagia. I feel, however, that I have already detained you overlong, and so I pass to what must be a very brief and inadequate notice of the question of treatment.

From the preceding considerations it is evident that hyposystole may have its origin either in the arteries or in the heart, and if we would treat our cases intelligently and helpfully we must learn to distinguish between these two very different classes. Where the heart is bending under an increased peripheral burden the first, the greatest, and the most urgent indication is to relieve that burden by ridding the system of the vaso-constrictor toxins which are accumulating in the blood, and this is to be effected, not by cardiac tonics, but by treatment, hygienic and dietetic, rather than medicinal, into the details of which it is impossible now to enter. Where the fault lies primarily in the myocardium, rest in bed, combined with cardiac tonics, such as digitalis, and diuretics, such as theobromine, are all important. But more important still, in the treatment of cardiac inadequacy of either class, is the prescription of that which all too frequently proves to be but very partially attainable—namely, the philosophic calm which is begotten of perfect tranquillity of spirit.

[8] Allbutt's System of Medicine, first edition, vol. v., p. 1018.

NEUROLOGICAL FRAGMENTS.

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(*Continued from* THE LANCET, *March 15th, 1902, p. 727.*)

No. XXI.

REMARKS ON CERTAIN ABNORMALITIES OF THE SENSATIONS HEAT AND COLD.—ILLUSTRATION OF PHYSIOLOGICAL ANTAGONISM.

I HAVE suggested an hypothesis (part of a wide one called Physiological Antagonism) in regard to certain fragments of the symptomatologies of some cases of one-sided sensory, or mainly sensory, paralysis consequent on cerebral lesions, probably lesions of the thalamic region. The cases are those in which there is referred to, or to some parts of, the skin of the side of the body affected, the sensation of continual over-coldness (so-called "subjective sensation" of cold) with, in the very same parts of the skin, inability to appreciate hot substances—a great, or a total, *minus* of one of these sensations, that of heat, and a great *plus* of the other, that of cold.

Dr. S. A. Kinnier Wilson has drawn my attention to a case of such a double symptomatology recorded by Sir Charles Bell in his work *The Hand*. (I quote from the sixth edition, 1854, p. 199.) Bell wrote: "The paralytic, having no sense of the extremes of temperature, is frequently severely burned; or his extremities may be mortified through cold. A man who had lost this sense in his right hand, but retained muscular power, lifted the cover of a pan, which from falling into the fire was burning hot, and deliberately replaced it, without being conscious of the heat; the effect, however, was that the skin of the palm and fingers was destroyed. The same man had a continual sensation of coldness in the affected arm, which actual cold did not aggravate, nor heat in any degree assuage."

We must carefully distinguish between activities of sensory cerebral elements, things physical, and sensations, things psychical; and between different degrees of temperature, things physical, and the sensations heat and cold, things psychical. There would be no difficulty in raising or lowering the *temperature* of the right hand of Bell's patient, but hot substances applied to it did not produce the *sensation* heat; and the continual over-coldness of the hand was not assuaged by their application.

I submit that in healthy people the cerebral nervous arrangements—I avoid using the word centre—which are the physical bases of the sensation heat for a cutaneous region and those which are the physical bases of the corresponding opposite sensation, cold, for the same region, antagonise one another; in more ordinary phraseology, the

two sets of cerebral nervous arrangements, one set representing (re-representing) "heat spots" and one set "cold spots," inhibit one another. The degree of quiescence of these two sets which there is in a healthy man during what might be called an "indifferent" state of "temperature *feeling*," such a state as that roughly described as "being neither hot nor cold," is, on the hypothesis, from nearly balanced antagonism of the two sets of nervous arrangements.

Now for cases of the one-sided sensory maladies alluded to, or rather those of them in which there is, negatively, loss of the sensation heat, along with, and referred to the same cutaneous area, super-positively, the sensation of continual over-coldness. The supposition is that in these cases there is from disease a destruction-lesion, or some kind of negative lesion (functionlessness due to some pathological process), of the cerebral nervous arrangements which are the physical bases of the sensation heat, but that there is no disease of the cerebral nervous arrangements which are the physical bases of the sensation cold. *With the negative lesion*, however, there *is* a double symptomatology, a double of two opposite elements, in one cutaneous area. *From the negative lesion* there is *directly* inability to appreciate heated substances applied to the cutaneous area; and *indirectly* from the lesion there is over-coldness referred to that same area. In recapitulation: the super-positive element of the double symptomatology, the over-coldness, is not caused by any disease of the physical bases of the sensation cold; obviously it cannot be if the disease has produced, as we are supposing, a negative lesion. The continual over-coldness is consequent on removal of control, synonymously of inhibition (Anstie's Principle), from the physical bases of the sensation cold by destruction, or by some negative lesion, of the physical bases of the sensation heat; there is a cessation of antagonism such that the nervous arrangements which are the physical bases of the sensation cold are "let go" and rise in activity (an hyper-physiological, not a pathological, condition) with an associated rise in the sensation cold, a continual over-coldness referred to the skin (an hyper-psychical condition).

On the principle of the hypothesis propounded there should be in cases of one-sided sensory affections consequent on negative cerebral lesions in which cases there is a continual sensation of great heat, over-hotness, of, referred to, parts of the skin,—there should be in these cases inability to have the sensation coldness from the application of substances of low temperature to the same parts of the skin. This state of things has been noted in several patients by Dr. Kinnier Wilson.

In stating the hypothesis of double antagonism in regard to the particular cases mentioned qualifications have been neglected. Nothing is said in the foregoing for or against that hypothesis in regard to abnormalities of the sensations heat and cold in cases of syringomyelia or in any nervous maladies with lesions of parts of the central nervous system lower than the cerebral hemispheres.

Cases of Epilepsy (discharge cerebral lesions) in the paroxysms of which there is the so-called "subjective" sensation of heat or the so-called "subjective" sensation of cold are best considered separately. In the paroxysms of some of these cases the sensation cold perhaps results in a roundabout way by withdrawal of warm fluid, blood, from "cold spots" by contraction of cutaneous arteries, and in other cases that cold sensation may arise during epileptic discharges of the nervous arrangements which are the physical bases of the sensation cold. I have notes of the case of an epileptic patient whose paroxysms began by an auditory warning, who had also a "burning sensation" of parts of the skin of one half of his body in his paroxysms. In such cases it would be well, immediately after the ending of a paroxysm, to test those parts of the skin for both heat and cold by application of hot and cold substances; there might be temporary exhaustion, functionlessness, of the cerebral nervous elements which had been discharged in the paroxysm, of those which are the physical bases of the sensation heat—a state of things analogous to temporary exhaustion (functionlessness) of motor cerebral elements in cases of temporary motor paralysis after a convulsive seizure—and there might be, indirectly consequent on that exhaustion, a rise in activity of the physical bases of the sensation cold with an associated sensation of over-coldness.

A CASE OF BLOOD CRISIS OCCURRING IN LARDACEOUS DISEASE.

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THE subject of the following notes, a man, aged 30 years, was admitted into St. George's Hospital on April 19th, 1906, for pain in the abdomen, headache, and fever. The patient had served five years in India, having been home one year, and during his tropical service had suffered on three occasions from congestion of the liver and at times from low fever. There was a history of syphilis. His illness commenced suddenly four days previously with abdominal pain, radiating to the shoulders, headache, and fever; during the last two days he had vomited frequently and passed very dark-coloured urine. He looked very ill, was anæmic but fairly well nourished, and there was great loss of strength. The skin was muddy and yellowish with freckles of pigment about the body and in the mouth. The conjunctivæ and under surface of the tongue were slightly icteric. The temperature was 103° F.; the pulse was 112 and of low tension. The abdomen was much distended, rigid, and extremely tender all over; so prominent, indeed, were the abdominal symptoms that the case was at first thought to be one of appendicitis. The right chest was dull in the axilla and up to the level of the seventh spine behind. Over this area tactile vocal fremitus was diminished and on auscultation the breath sounds were very faint and a few moist râles were heard. The urine was of a dark mahogany colour almost impermeable to the light, though only on one occasion did it present these characteristics after admission. The quantity passed was small in amount.

After 24 hours' stay in the hospital the abdominal distension and pain were less and the symptoms and the appearance of the urine were suggestive of blackwater fever or of paroxsymal hæmoglobinuria with rapid destruction of the red cells. The patient was treated with quinine. The blood in the urine rapidly diminished. On April 21st an examination of the urine showed that it contained albumin in abundance, numerous granular casts, a few hyaline casts, and a few pus and red cells; its specific gravity was 1026 (Dr. C. Slater). On the 24th the blood was examined for malarial parasites and the condition then found was so unusual as to merit more than a passing notice. No malarial parasites were found in the blood; the red corpuscles were pale in colour, vacuolated, much distorted and buckled, and showed marked variation in size, microcytes and megalocytes being numerous. The remarkable feature in the films was the extraordinary number of nucleated red cells, chiefly normoblasts, though a few megaloblasts and poikiloblasts were also present; from 5 to 20 could be counted in every field with a 1-12th inch oil immersion; the majority had single nuclei, many possessed two, and quite a number were polynucleated, the nuclei ranging from three to six; in many the nuclei were arranged symmetrically as in a rosette, presenting a most striking picture. Karyokinetic figures were to be seen and free extruded nuclei were fairly numerous.

In a blood count made on April 26th the red cells numbered approximately 1,100,000 per cubic millimetre (we say approximately as owing to a tendency of the corpuscles to clump and adhere to each other as if viscid, difficulty was experienced in making a blood count). The leucocytes numbered 13,600 per cubic millimetre. A differential count on the same date was as follows: lymphocytes, 12·4 per cent.; large mononuclears, 7 per cent.; polymorphonuclears, 79 per cent.; eosinophiles, 1·5 per cent.; myelocytes, 1·1 per cent. Hæmoglobin, 29 per cent. Of 305 nucleated red cells counted, 217 showed single nuclei, 40 had double nuclei, and 48 were polynucleated. The ratio of nucleated red cells to leucocytes was as 152 to 100—i.e., 20,672 per cubic millimetre; the ratio to red corpuscles was as 1 to 53. The polymorphonuclear leucocytes varied greatly in size, many being no larger than a red corpuscle, and were at a first glance liable to be mistaken for the multinucleated variety of red corpuscles. In these smaller

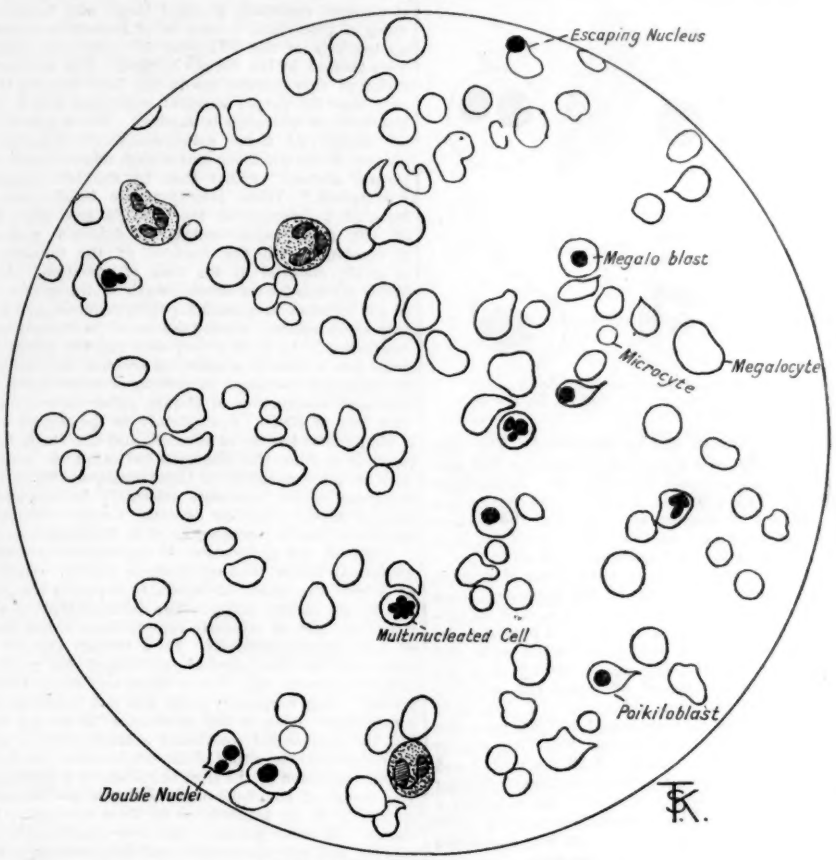
polymorphonuclear leucocytes the nuclei stained deeply, were numerous and well defined, whilst in the larger, apparently older ones, both granules and nuclei were very indistinct and had a faded appearance as if undergoing some degenerative process.

On April 28th the blood presented much the same characteristics described above; the differential count was as follows: lymphocytes, 17·5 per cent.; large mononuclears, 4 per cent.; polymorphonuclears, 76·5 per cent.; eosinophiles, 0·5 per cent.; and myelocytes, 1·5 per cent. Of 117 nucleated red cells counted 94 had single nuclei, 12 had double nuclei, and 11 were polynucleated. The ratio of nucleated cells to leucocytes was as 58 to 100.

On May 2nd the differential count was: lymphocytes, 15 per cent.; large mononuclears, 5·3 per cent.; polymorphonuclears, 79 per cent.; and eosinophiles, 0·7 per cent. condition of the patient improved considerably for a time, but later violent diarrhœa accompanied by some vomiting and abdominal distension and tenderness set in; this varied from day to day. Thrombosis of the superficial veins of the legs supervened with much œdema and general aching pains all over. Towards the middle of May there was again a definite change for the better. The diarrhœa was less, the pain disappeared, and the temperature was normal. The patient, who had been upon a low diet, was now able to eat better and took a little chicken. The urine still contained albumin and urobilin. The improvement was, unfortunately, only temporary, for a gradual failure of strength followed and he died in an asthenic state on June 9th.

Necropsy.—At the post-mortem examination there were pigmented lines over the abdomen and broad bands upon the shins. There were soft adhesions over the whole of the right

FIG. 1.



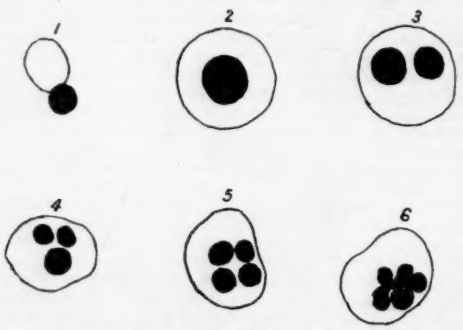
Field under 1-12th, showing 11 nucleated red cells.

The red count failed. The leucocytes numbered 14,506 per cubic millimetre. There were no nucleated red cells. On May 17th the differential count was: lymphocytes, 19 per cent.; large mononuclears, 5·3 per cent.; polymorphonuclears, 75·8 per cent.; and eosinophiles, *nil*. The red cells were 3,950,000 per cubic millimetre; leucocytes, 17,700; only 2 nucleated red cells were seen. Hæmoglobin, 58 per cent.

The progress of the case was as follows. By April 24th the blood had disappeared from the urine though this still contained albumin in small quantity, casts, and urobilin. The temperature fell after the patient had been taking quinine for a week. The dulness in the axilla and at the right base persisted and was thought to be due to the liver, which was cautiously explored on two occasions for pus by puncture with a large needle, but none was found. The lung and at the left apex. The right lung was encroached upon by a round bossing of the liver which pushed up the diaphragm to the level of the fourth rib and the sixth dorsal vertebra. The lungs were œdematous. The lower right lobe was less crepitant than the rest of the lung. The liver weighed 4½ pounds. Its surface was much scarred and there were firm adhesions to the under surface of the diaphragm. On the upper surface of the liver at the junction of the right and left lobes was a larger depressed scar which did not extend deeply into the organ. The right lobe was bunched up, apparently by the capsular fibrosis, into the thorax. There were also smaller bosses on the under surface of the quadrate and left lobes, and to a lesser degree on the liver generally. On section the liver tissue was healthy in appearance and was not tough. The general peritoneum was not thickened, except over infarcts in the

spleen. The gall-bladder and bile ducts were normal. The stomach appeared normal but contained grumous blood-stained fluid, as did the upper four yards of the intestine. In the lower part of the jejunum a superficial ulcer was found involving a valvula connivens, and extending transversely for an inch, and from this hæmorrhage had been recent. The pancreas and suprarenals were normal. The kidneys (left, 17 ounces; right, 16 ounces) were large and the surface was waxy in appearance, the capsules stripping easily. On section the organs, except at the centre of the pyramids, were of the colour of yellow fat. Iodine showed lardaceous degeneration. The liver did not give this reaction. The spleen (8 ounces) was waxy and contained three infarcts. To the naked eye the left testis was fibroid, the right normal. The case was therefore one of lardaceous disease following syphilis, complicated by hæmorrhage, presumably from the kidney, and terminally from the bowel, with patches of old perihepatitis deforming the liver.

FIG. 2.



Selected cells to show (1) escaping nucleus, (2) single nucleated red cell, (3) double nucleated red cell, and (4), (5), and (6) polynucleated red cells.

Several points of interest may be mentioned. The most prominent feature after the abdominal symptoms had subsided was pronounced anæmia following the hæmorrhage from the kidneys. It is probable, however, that there was a considerable amount of anæmia antecedent to the hæmorrhage, in which case even a moderate loss of blood would be sufficient to account for the occurrence of blood-crisis.

Blood crisis is not uncommon in some forms of anæmia and is not infrequently met with in the apyrexial stage following pernicious malarial attacks, but a case so pronounced as that under review, associated as it proved to be with amyloid disease of the kidney, is seldom seen and should be placed on record. The points worthy of notice are: 1. The enormous number of nucleated red cells—on April 26th over 20,000 per cubic millimetre. 2. The rapid increase in number of the red cells from 1,100,000 per cubic millimetre on April 26th to 3,950,000 on May 17th, and in the amount of hæmoglobin from 29 to 58 per cent.; and the improvement in the patient's general condition following the blood crisis which may be regarded as of the nature of a regenerative process. 3. The remarkable rapidity with which the nucleated cells disappeared; on May 2nd, eight days after the crisis, there was not one to be seen.

Bleeding from the kidneys is an uncommon symptom in lardaceous disease. Dickinson says in Allbutt's "System of Medicine" that in the urine of lardaceous kidneys blood is but rarely present, but that when present it is sometimes in considerable quantity (Vol. IV.). In the same article he says that hæmorrhagic complications are rare, epistaxis being the most common. In this case bleeding took place before death from a superficial ulcer in the jejunum. A similar occurrence is recorded by Steinhaus.[1] Thrombosis, again, is not a common complication. It was found by Dickinson twice in 74 cases. The one typical symptom of lardaceous disease of the kidney which was present was diarrhœa. Œdema did not occur except in connexion with venous thrombosis.

It is difficult to determine whether the patches of capsular fibrosis deforming the liver are to be attributed to syphilis or to acute perihepatitis accompanying the attacks of congestion of the liver from which the patient had suffered. On account of the circumscribed nature of the patches we are inclined to regard the condition as a syphilitic one.

[1] Schmidt's Jahrbericht der Medicin, vol. cclxxvii., p. 40, 1903

THE TREATMENT OF EMPYEMATA WITH NOTES FROM 55 CONSECUTIVE CASES.

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As the question of the relative merits of the treatment of empyemata by resection of ribs or by intercostal incision without resection of ribs is still an occasional subject of discussion, especially amongst those who favour the latter mode of procedure, it may be of interest to place on record an analysis of the following 55 consecutive cases which were treated by the former method. The theoretical justification of this method lies in the fact that by these means only can the proper surgical principles which govern the treatment of abscesses be applied. The urgent need for the application of these principles would perhaps be more obvious if the condition was always referred to as an "inter-pleural abscess" rather than by the less suggestive title "empyema." These principles are briefly the establishment of a drainage of the infected area that shall allow of the most rapid escape of infected material from it combined with the removal of the maximum amount of septic material at the time of operation. An incision, which extends for the whole length of the greatest diameter of the infected area, satisfies these requirements and should only be abandoned when anatomical limitations prevent its completion. In such a way only may the conversion of an acute into a chronic abscess be avoided, with all the accompanying disadvantages of prolonged impairment of health, increased destruction of tissues, subsequent deformity, and even loss of life. Unfortunately, in the case of empyemata a compromise has to be effected, and the further that compromise is from the principles indicated the more frequent will be the occurrence of those disastrous forms of chronic empyema which terminate miserably in amyloid disease, general septic infection of other serous cavities, or even survival after the performance of an Estlander's operation.

Delay in the application of appropriate treatment is an additional factor tending towards failure. Such delay is, as a rule, the result of failure to recognise the presence of pus in the pleural cavity. The differentiation of this condition from one of extensive consolidation of the lung may be of considerable difficulty. In a certain number of these cases sent to the hospital this reason for perferring the latter diagnosis—viz., "that there was no displacement of viscera"—was frequently given, and had unfortunately led to considerable delay in the application of proper treatment. But the mechanical conditions obtaining within the thorax are not favourable either to the displacement of the heart or to the depression of the liver or spleen by a pleural effusion. The thrust of the fluid ought either to act directly on the viscera or to be transmitted to them through a rigid substance. In most instances the lung intervenes between the effusion and any other viscus and collapses—or condenses—to make room within the thoracic cavity for the effusion. The whole thrust of the fluid is thus used up in maintaining the lung in a collapsed condition and not until the lung is incapable of yielding to any further extent can the thrusting effect of the fluid be transmitted to adjacent viscera.

Evidence of displacement of viscera was carefully sought for in 41 consecutive cases. In only 19 was it found and in many of these cases a slight enlargement in the area of cardiac dulness or the fact that the lower edge of the liver and spleen was palpable was accepted as such evidence, so as to avoid the error of unduly minimising the apparent frequency of the occurrence of displacement. In many cases in which the effusion was large—in one case 35 ounces were withdrawn from a child seven years old—no signs of displacement could be found, whilst such signs were present in other cases from which only three or four ounces of fluid were removed. The conclusion to be drawn is that so-called signs of displacement of viscera are in many cases merely

signs of enlargement of viscera, and that the absence of these signs is of little value in excluding the presence of fluid in the chest.

Technique of operation.—In all 55 cases from two to three inches of rib were removed so as to admit a drainage-tube of about three-quarters of an inch in diameter. To do this in some cases it was necessary to remove portions of two ribs. The centre of the incision was made to coincide with the point through which pus had been drawn by the exploring needle. To take the lowest point of the dull area for the site of operation is to run a risk of opening the pleural cavity below the empyema, since the dulness may be due to thickened pleura or collapsed lung, and in some instances the lower part of the diaphragm may be adherent to the wall of the thorax and if not recognised the abdominal cavity may be opened. Nor is there any advantage for subsequent drainage in choosing the lowest point, since during the time when drainage is most active after the operation the patient is nearly always in the recumbent position. Consequently the posterior thoracic wall becomes the floor of the empyema and this will drain quite freely through any hole in its floor so long as the patient is lying down. By the time that a different posture can be assumed the need for very free drainage has passed.

Having allowed the contents of the abscess to escape slowly the "toilet of the pleura" was then performed with the same care that is devoted to the "toilet of the peritoneum." If the pus was thin and the cavity was not lined by lymph the whole of the wall of empyema was sponged with sterilised gauze mops soaked in saline solution and then with dry gauze mops. But if the empyema was of such long standing that the surface of the lung and the inner wall of the thorax were covered by thick lymph then both the visceral and parietal layers of pleura forming the boundaries of the cavity were systematically scraped with a sharp spoon so as to detach the whole of the layer of lymph. The cavity was then cleaned by gauze mops as before. By this method the maximum amount of septic matter is removed at the time of operation and subsequent interference with drainage by solid particles of lymph is prevented. If the cavity was bounded by adhesions that yielded easily to pressure they were broken down, since they frequently intervened between other collections of pus and the main cavity. Tough adhesions, on the other hand, that offered considerable resistance were not broken down, since they form, as a rule, the extreme limits of the abscess cavity. On completion of the operation a rubber drainage-tube, the length of which only just exceeded the thickness of the wall of the thorax, was inserted. A short tube with a wide lumen, such as that specially designed for this type of case by Bilton Pollard, combines the essentials for rapid and free drainage without acting as a foreign body inside the abscess cavity. No antiseptics were used during the course of the operation and no finger was introduced into the wound. This is of the utmost importance. The limits of the abscess cavity can be thoroughly explored and the strength of the adhesions satisfactorily tested by any sterilised blunt instrument. Further, all mops, tubes, and dressings that came into immediate contact with the wound or abscess cavity were applied by means of large sterilised forceps, and this procedure was rigidly adhered to in all the subsequent dressings.

After-treatment.—Attempts were made to dispense with the use of the rubber drainage tube within 48 hours after the operation. In most cases, however, it was necessary to retain it for five or six days. A small wick of sterilised plain gauze was then substituted for it and shortened daily. The patients' beds were drawn up alongside windows which were kept widely open at the bottom day and night. Their heads and hands were kept warm by means of a woollen cap and gloves. The wound was dressed daily under the strict aseptic conditions already referred to. The patients were allowed to get up as soon as their general strength permitted. No "pulmonary gymnastics" (the term is borrowed) were indulged in. The failure of the lung to expand is not from any increased pressure on the outer surface of the lung (the pressure is rather decreased by the operation since a dense fluid "pus" is replaced by a rarer fluid "air"), but because a part of the lung is forming part of the wall of the abscess cavity and is consequently infiltrated with inflammatory exudation. The more rapidly these products are drained away the more rapidly will expansibility of the lung return and to attempt to restore this by inflating the lung by the use of Wolff's bottles is a confession that drainage of the abscess cavity has either been applied too late or that it is inadequate. If free drainage is established early in the course of the illness the expansibility of the lung is only temporarily impaired and returns *pari passu* with the healing of the rest of the wall of the abscess cavity. In cases of long standing where drainage has been established late or where inadequate drainage was established at the time of operation permanent fibrotic changes have occurred in the lung tissue forming the wall of the abscess cavity and no hyperpnœa will ever convert that fibrous tissue again into lung tissue. Another tissue whose powers of recuperation may be

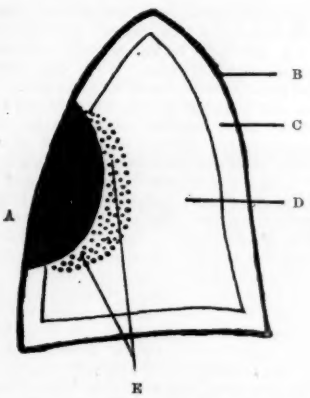

Diagram showing the area of the lung in which expansile power is impaired either temporarily or permanently. A, Empyema. B, Wall of thorax. C, Pleural cavity. D, Lung. E, Area of "condensed" or "collapsed" lung forming the wall of the empyema.

permanently destroyed as the result of prolonged inadequate drainage is the periosteum stripped off the ribs at the time of operation. With free rapid drainage its osteogenetic powers are not impaired and consequently the gap made in the bony framework of the thorax is filled up by new bone within about eight weeks from the date of operation.

Results.—11 cases out of the 55 died. Only one of the fatal cases was a simple uncomplicated empyema. Included in the 55 consecutive cases of empyema are several cases in which pus in the pleural cavity was only an incident of a general disease. Thus two of the fatal cases were almost moribund at the time of admission to hospital and died within 24 hours after the operation. Post mortem the meninges, pericardium, and peritoneum were found also to be covered by a purulent exudate. Five other fatal cases had been suffering from abdominal and pulmonary tuberculosis for some months before the development of an empyema. They eventually died from general tuberculosis some weeks later but in spite of the general illness the empyemata were healing quite satisfactorily. In two other fatal cases the empyemata were only secondary to abscesses in the lungs of some months' duration before the time of operation. One case developed broncho-pneumonia a month after the date of operation and died. The one case of simple uncomplicated empyema which ended fatally has a clinical course of particular interest in view of the treatment applied to subsequent cases of the same type which ended in recovery. Briefly, the child lived for three weeks from the date of operation, but although the abscess cavity became quite clean and only a thin serum was discharged daily no attempt at repair occurred and the child became progressively weaker and died from no detectable cause. Post mortem a large clean cavity was found in the pleura and the lung was collapsed; otherwise the child was healthy. Such cases of progressive asthenia ending fatally after an operation for empyema in which no morbid condition can be found post mortem sufficient to account for death are not uncommon. The chief characteristics of such cases are a progressive improvement in the local condition accompanied by a progressive impairment in the general condition of the patient, and neither before nor after death is the cause of the fatal termination evident. In three

cases exhibiting such features after the first operation active treatment was resorted to and the immediate change in the general condition of the patients was so striking as to encourage the belief that probably such a line of treatment had averted a fatal issue. In all these cases after an anæsthetic had been given again the surface wound was excised, the interpleural cavity was well sprayed out with hot saline solution, then dried by means of sterilised gauze mops, and finally the opening in the chest wall was entirely closed by stitches. In all cases healing occurred by first intention and the children made uninterrupted recoveries. The following notes give a brief account of one of these cases.

A child, aged 18 months, who had suffered from whooping-cough for the five weeks immediately preceding the date of operation, was admitted to the hospital on Dec. 6th with signs of a right-sided empyema. A rib was resected on that date and the usual routine treatment applied. On the 13th an empyema was detected on the left side and similar treatment adopted. Both cavities became quite clean as the result of drainage but showed no signs of filling up. The patient became profoundly emaciated and on Jan. 1st of the following year was in a marasmic condition and able to take only a slight amount of liquid nourishment. His weight was only 19 pounds. No cause for this general and progressive asthenia could be discovered. Chloroform was administered, the cavities in the interpleural space were cleaned, and the wounds excised and closed as already described. Immediate improvement followed. Both wounds healed by first intention. By the end of a week the child had gained one pound in weight and on Feb. 27th he was discharged as quite well, having gained four pounds in weight since the date of the second operation. Six months later he was seen and was a well-nourished healthy child having had no further trouble. The histories of the other two cases are very similar except that each patient only suffered from a single empyema. It is as difficult to give an explanation of the recovery in such cases as it is of the death of the other referred to above. The result of the method of treatment adopted, however, is encouraging and appears to be worthy of further trial. Of the remaining 44 cases which recovered one had a double empyema and was not completely healed until 73 days from the date of the first operation, the convalescence being interrupted by an attack of broncho-pneumonia. Six cases took 41 days to heal; six cases took 30 days to heal; seven cases took from 21 to 28 days to heal; 15 cases were healed in less than 21 days; whilst nine cases were healed within 14 days from the date of operation. (By "healed" is implied that the wound was entirely covered by skin and that the patient in other respects was quite well.)

I must express my indebtedness to my colleagues at Great Ormond-street for placing so much clinical material at my disposal during my tenure of the post of resident medical superintendent and for their permission to make use of the notes on the cases.

Welbeck-street, W.

SINGLE AND SUCCESSIVE EXTRA-SYSTOLES.

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THE patient, a seaman, was first seen in the out-patients' department of the Seamen's Hospital Society, Greenwich, in August, 1908. The following details of his history and state may be placed on record. The family history contained nothing relevant. He stated that he had suffered from "gout" 12 years previously and that at that time he had had swelling of his great toes with considerable pain and tenderness. He also said that he had had one or two mild attacks since. About 12 years ago he had "influenza" which laid him up for some weeks. Otherwise his health had been good. Venereal disease was denied; and there was no statement of value which might incline one to the view that he had ever suffered from rheumatic infection. His present trouble began in July, 1906, when a heavy case fell on his leg and he was laid up in an infirmary for six weeks. He stated that he had since suffered, from time to time, from pain or uneasiness in the chest and that he had been short of breath on exertion.

The patient was admitted as an in-patient at the Seamen's Hospital on August 27th, 1906, complaining of pain in the limbs and shortness of breath. The notes taken at this time show that the chest moved well and that there were no abnormal physical signs on percussion or auscultation of the lungs. The cardiac dulness is described as "not increased." There were no murmurs. The pulse was markedly irregular. The abdomen was full and the liver was palpable. He was discharged on Sept. 30th. In the interval he had several attacks of shortness of breath, some of which were nocturnal. On one occasion a systolic murmur was noted at the apex. The pulse-rate is recorded as 44, 48, 50, 52, 48, 60, 72, and 96, the last figures being given shortly before the date of discharge, when the pulse is said to have been regular. The respiratory rates are given as 28, 20, 24, 20, 16, 18, 29, &c. The temperature was normal throughout.

On Nov. 19th, 1906, he was readmitted, with shortness of breath, præcordial pain, and slight dropsy. He had a slight cough and sputum. The pulse was described as small and irregular. The heart's limits were found in the nipple line in the fifth and sixth spaces, at the left edge of the sternum and at the fourth rib. The sounds were irregular and of triple rhythm, but no murmurs were heard. Crepitations at the bases and enlarged and tender liver are described. The spleen was not felt. The arteries were somewhat tortuous and thickened. The temperature was normal throughout; the pulse was counted at rates varying from 50 to 96. There was $\frac{1}{2}$ per 1000 of albumin in the urine upon admission, the specific gravity being 1005. The quantity varied during his stay from 14 to 47 ounces. The albumin had practically disappeared when he was discharged "much improved" on Jan. 30th, 1907.

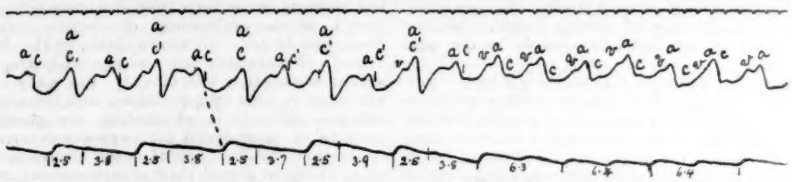
The patient has been attending the out-patients' department off and on ever since, and the notes show in the main that his state has been the same throughout. Shortness of breath on exertion, a certain degree of præcordial uneasiness, and palpitation have been present. His cough has at times been troublesome. The pulse has varied but has usually been wildly irregular. There are no notes of any appreciable degree of cardiac dilatation. His condition when first seen by the writer, and ever since, has been the same. When he rests he is better and his chief troubles are the shortness of breath and palpitation brought on by exertion and the strain of a now almost constant cough. He has never shown cardiac dilatation while under observation, neither have there been any murmurs, except on one occasion, when he came with slight dropsy of the lower limbs, the apex beat at the nipple line (four inches from the left border of the sternum), and a short systolic bruit. The veins of the neck are always more prominent than they should be and pulsate markedly with the patient standing. The pulse irregularity has always been the chief feature of the case and his general condition varies with the degree of irregularity present. The heart-sounds correspond to the pulse—that is to say, there is a normal first and second sound with each beat transmitted to the wrist, and a first sound only upon the occasions when the beat fails to reach the periphery. The sounds at the apex and epigastrium have always shown correspondence; the first and second sounds have never been observed to reduplicate. He is at times capable of considerable exertion and usually walks a mile to the out-patients' department.[1]

Numerous records of the irregularities have been taken and some of these are published as illustrative of the cardiac movements. It is obvious that the low pulse counts made during his stays in hospital were due to weak or missed beats. In brief, there are rare occasions on which the pulse is regular and it then varies between 100 and 120. Usually the beats are coupled or there is marked irregularity. Simultaneous radial and venous curves have allowed analysis of most of the irregularities and the observations have been checked and amplified by electro-cardiograms taken at Professor A. Waller's laboratory at South Kensington.

The first tracing (Fig. 1) shows two phases. In the first portion of the curve are five normal beats, each followed by an extra-systole at a definite and fixed time interval. Suddenly the pulse rhythm alters and each beat is

[1] Since this article was written the man has been an in-patient. The irregular pulse still constitutes the most important physical sign.

FIG. 1.*

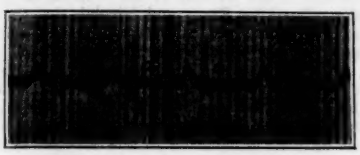


* All the tracings have been reduced to about four-fifths of the original scale.

accompanied by *a*, *c*, and *v* waves. During the coupled portion of the tracing the *a* and *c* waves coincide at alternate beats and a full compensatory pause follows each extra-systole. The figure is an example of what may be termed *regular alternating ventricular extra-systole.*

Fig. 2 is an electro-cardiogram from a normal subject which may be used for comparison with those described later. This electro-cardiogram shows the usual three peaks as they occur in Einthoven's curves. The first (marked *a*) corresponds to auricular systole; the sharp peak following it (reading from right to left as opposed to the sphygmograph curves) and the succeeding wave which is thicker in outline represent ventricular systole. Such a curve is obtained, as those who are acquainted with Einthoven's work will know, by immersing two extremities (in this instance the right hand and left leg) in an electrolytic solution and connecting

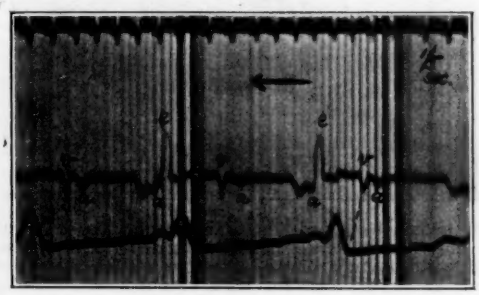
FIG. 2.



the separate baths to the terminals of a sensitive galvanometer. Einthoven's instrument is sufficiently sensitive to show the electrical changes occurring in the body as a result of both auricular and ventricular contractions.

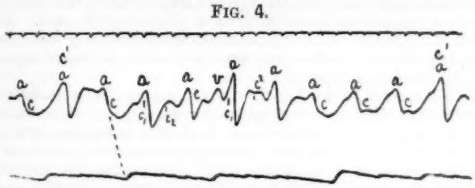
Fig. 3 is a similar electro-cardiogram taken from the patient. A time-tracing in one-fifth of a second and a radial pulse-tracing are also shown, the three movements having been synchronously photographed and corresponding points of time lying vertically above one another. It is to be noted that the electro-cardiogram is reversed in this curve, as compared to Fig. 1. This is dependent upon the fact that the commutator in the circuit was inadvertently turned between the taking of the two curves. Remembering that this reversal is present it will be seen that each radial beat corresponds to two small peaks, marked *a* and *v* respectively, and that these indicate the onset of auricular and ventricular contraction.[2] The third wave is present and, as is frequently the case, is somewhat anomalous in form. But in addition to these waves others occur. They are marked *e*, *e*, and they correspond in time to the position of the extra-systoles which have only just affected the radial pulse. Each consists of a prominent peak (directed upwards in this curve) and a rounded curve (dipping downwards in this tracing). Superimposed upon these rounded waves are two *a* waves, and they occupy such a position that the *a* waves are regularly placed throughout. The electro-cardiogram is thus in full accord with the venous curve shown in Fig. 1.

FIG. 3.



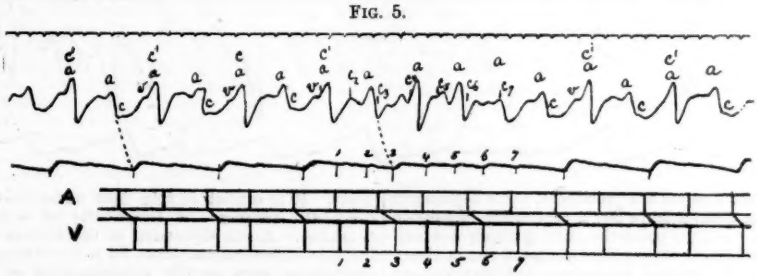
Before proceeding further it may be well to note that although the electrical change occasioned by the extra-systole is of greater extent than that produced by the physiological beat, yet the former affects the arterial system to a far less extent. Moreover, the peak of the extra-systole

FIG. 4.



is directed in a reverse direction to the peak of the physiological beat. So far as we have proceeded it has been shown that the patient is the subject of extra-systole and that at times the premature beats alternate with the regular beats. The patient not only shows single and alternating extra-systoles, but they may occur in groups, and the venous

FIG. 5.



records produced by such groups at times become extremely complex.

Fig. 4 shows a comparatively simple irregularity. First a physiological beat occurs and this is succeeded by a single extra-systole. In the next two groups the physiological beats are separated from each other by two extra-systoles (o^1 and o^2). Despite the successive extra-systoles the *a* waves

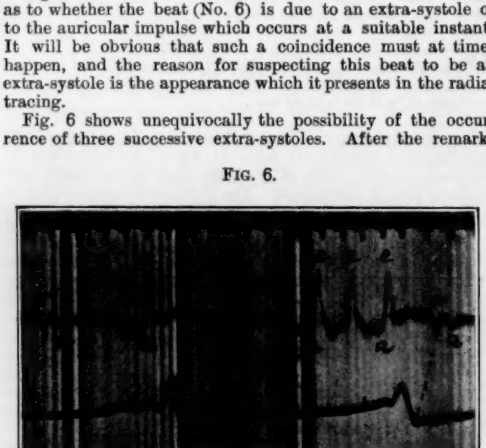
[2] In consequence of the reversal the waves are upside down throughout.

of the jugular curve remain regular throughout, and in each instance the compensatory pause following the last extra-systole occurs but is naturally of varying length, according to the relationship of the last extra-systole to the next physiological beat.

Fig. 5 shows similar events, but here there is some doubt as to whether the beat (No. 6) is due to an extra-systole or to the auricular impulse which occurs at a suitable instant. It will be obvious that such a coincidence must at times happen, and the reason for suspecting this beat to be an extra-systole is the appearance which it presents in the radial tracing.

Fig. 6 shows unequivocally the possibility of the occurrence of three successive extra-systoles. After the remarks

FIG. 6.



which have been made in connexion with Fig. 3 it will require little further explanation. There is, however, one noteworthy feature. If the three extra-systoles *e*, *e*, *e* are examined it will be seen that the *a* wave is absent from the central one. As in Fig. 3, the *a* waves are regularly placed throughout, but with the occurrence of two successive extra-systoles they do not necessarily coincide with all the waves due to the ventricular contraction, and in this instance the second extra-systole is uncomplicated. Again, the presence of the *a* wave preceding this extra-systole should be noted, for in the absence of the inverted type of electric curve, the second wave could not be identified from a physiological beat. In beat 6 of Fig. 5 it is impossible to state definitely whether extra-systole or physiological beat is present, in the absence of the electro-cardiogram.

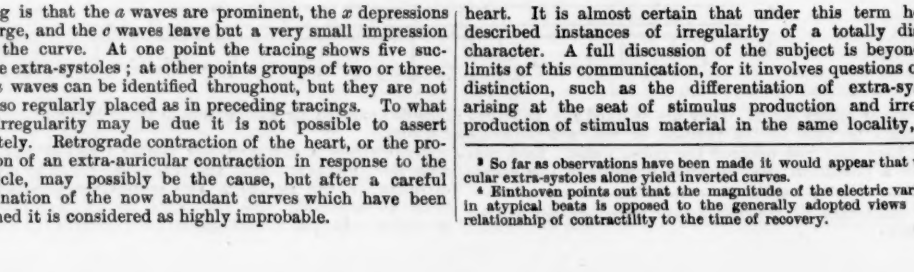
We come finally to Fig. 7. It represents the irregularity which the patient most frequently presents, and those who are acquainted with venous pulse work will recognise in it a very close resemblance, both in the arterial and venous curve, to that form of irregularity which Mackenzie has termed "nodal rhythm." When first observed great difficulty was experienced in its analysis, but when subsequent curves were taken (those exampled in Figs. 1, 4, and 5) the key to its analysis was found and received full confirmation from the subsequent electro-cardiograms. The clue to the analysis of this

The occurrence of multiple and successive extra-systoles has hitherto never been fully demonstrated. It was suggested as an explanation of certain irregularities by Mackenzie in his well-known book, "The Study of the Pulse." Wenckebach has also figured tracings in which a similar explanation was offered. But many of the curves were open to other interpretations, and there remained considerable difficulty in eliminating the possibility of the presence of interpolated extra-systoles occurring singly or in groups. The final appeal to the electro-cardiogram may be said to have placed their occurrence and recognition in man beyond question.

The inverted type of curve which the ventricle yields during an extra-systole is not without interest.[3] Our knowledge of the factors at work in the production of such extra beats in man is at present very meagre. A very notable feature in Fig. 7 is the absence of relationship between the strength of a particular pulse beat and the preceding pause. Assuming that the inflow to the heart is fairly steady throughout, and the venous curve leads us to believe that such is the case, the absence of this relationship can only be explained by supposing that the ventricular content is not so completely expelled in the case of an extra-systole as in the case of a physiological beat. It might be supposed that the whole of the ventricular muscle has contracted with diminished force or, on the other hand, that only a portion of the ventricular wall has contracted. Now if we are to consider the actual amount of electrical change occurring as a measure of the work accomplished by the heart, and such a view appears to be rational, it is impossible to consider a depression of contractility or the possibility of a limitation of the contraction to one portion of the ventricular wall. The explanation offered by Kraus and Nicolai, that the inverted wave is an expression of hemisystole, is not entirely acceptable; the evidence which they bring forward for such a view is by no means complete. The hypothesis suggested by Gotch in explanation of the normal triphasic ventricular curve, as the result of the passage of a contraction wave from base to apex and apex to base may help in the ultimate elucidation of the inverted curve. For if this hypothesis is well founded it would seem to follow that we must attribute the inverted wave of the extra-systole to a reversed or unusual order of ventricular contraction. It is probable that we are on fairly safe ground in assuming that the inverted curve of the extra-systole represents a relatively active ventricular contraction,[4] and the fact that the cardiogram of an extra-systole is as a rule far larger in relation to the preceding physiological beat than the radial pulse would warrant us in expecting tends to confirm the view; we are further justified in concluding that the extra-systoles are beats which are anomalous in the highest degree, though from their close resemblance to each other we are forced to recognise their specific nature, and their probable origin in certain instances, as in the present one, from a fixed point.

In conclusion, brief reference must be made to the hypothesis of Wenckebach in regard to "true bigeminy" of the

FIG. 7.



tracing is that the *a* waves are prominent, the *x* depressions are large, and the *c* waves leave but a very small impression upon the curve. At one point the tracing shows five successive extra-systoles; at other points groups of two or three. The *a* waves can be identified throughout, but they are not quite so regularly placed as in preceding tracings. To what this irregularity may be due it is not possible to assert definitely. Retrograde contraction of the heart, or the production of an extra-auricular contraction in response to the ventricle, may possibly be the cause, but after a careful examination of the now abundant curves which have been obtained it is considered as highly improbable.

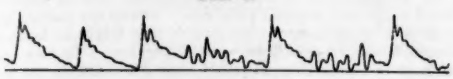
heart. It is almost certain that under this term he has described instances of irregularity of a totally distinct character. A full discussion of the subject is beyond the limits of this communication, for it involves questions of fine distinction, such as the differentiation of extra-systoles arising at the seat of stimulus production and irregular production of stimulus material in the same locality, be it

[3] So far as observations have been made it would appear that ventricular extra-systoles alone yield inverted curves.

[4] Einthoven points out that the magnitude of the electric variations in atypical beats is opposed to the generally adopted views of the relationship of contractility to the time of recovery.

in sinus or ventricle. Neither the absence of a full compensatory pause nor the presence of a fixed relationship between the first and second beat of a couple can be accepted as evidence against the presence of extra-systoles, and these two factors are the main ones by which Wenckebach attempts to isolate those cases which he considers as illustrating true bigeminy. It is felt that the introduction of the term is at present premature and that the subject cannot be further considered with profit until our knowledge of stimulus production, both in natural and unnatural situations, has advanced considerably. Wenckebach's view is dealt with because in a recent communication he has extended it, conceiving that not only a bigeminy but a tri- or poly-geminy may occur. The tracings which are given as examples of polygeminy, and notably that copied from Gibson's paper, appear to differ in no essential respect

FIG. 8.



from the curve reproduced in Fig. 8, which, from our knowledge of the case with which we are dealing, may be emphatically declared to represent groups of successive extra-systoles.

Since the patient has been under observation 11 successive extra-systoles is the largest number which have been noted.

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Nottingham-terrace, N.W.

TWO CASES OF HYPERTROPHIC PULMONARY OSTEO-ARTHROPATHY.

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CASE 1.—A married woman, aged 43 years, was admitted at the Royal Hospital for Diseases of the Chest on August 30th, 1905, complaining of cough and swelling of the arms and legs. She had lost her mother, a brother, and a sister from pulmonary tuberculosis, 22, 23, and 18 years previously respectively. There was no history of gout or rheumatism. She had lived in Wales until she was 22 years of age and since then in London. Until latterly she had enjoyed good health. The catemenia had always been scanty and irregular, but there was no history of vaginal discharge, and nothing pointing to disease of the pelvic organs. She had had two children but no miscarriages. Her general health had been good until the year 1900 when she took to bed for seven weeks with pains in the shoulders, hands, knees, and ankles. In 1901 she was laid up for eight weeks with pain after food and sickness. Her "present illness" dated back three years and began with an attack of right-sided pneumonia which confined her to bed for nine weeks. Since that time she had not been strong and had complained of occasional pain in the right side. 12 months before admission to hospital she was in bed, this time for seven weeks, with right-sided pleurisy. She had been in a poor state of health since this attack, and had suffered from increasing shortness of breath and constant sickness. She had noticed clubbing of the fingers for six months, swelling of the legs for four months, and swelling of the arms for one month. This swelling was accompanied by pain, especially on movement. On examination the patient was somewhat short of breath even when lying in bed. The thyroid was the seat of some general enlargement. The apex beat of the heart was in the fourth space in the nipple line. The cardiac action was rapid but regular and the sounds were clear. Over the right lung posteriorly there was absolute dulness below the angle of the scapula, with absence of breath sounds and diminished expansion, vocal fremitus, and vocal resonance. For two inches above this area the percussion note was impaired and a few râles were heard. Physical signs similar to those at the base behind were found at the axillary and anterior bases of the lung. With the exception of some dulness at the left base, which was probably caused by the enlarged spleen, the left chest presented no abnormality. There was no evidence of ascites. The liver edge was one inch below the costal margin in the nipple line and the spleen was much enlarged, reaching to the umbilicus. The blood count gave red corpuscles 4,250,000 per cubic millimetre and leucocytes 6000; of the latter 56 per cent. were polynuclear, 30 per cent. were lymphocytes, and 7 per cent. coarse eosinophile cells. The hæmoglobin value was 40 per cent. The urine was normal. There was much œdema of the legs and arms which did not pit easily. That on the legs reached to the lower abdominal wall, that on the arms to the elbows. Lumbar œdema was also present. She had marked deformity of the arms and legs in addition to the œdema. Clubbing of the terminal phalanges of the fingers was well marked, least so in the case of the little fingers, and there was fusiform swelling of the inter-phalangeal joints. At the wrist enlargement was present, with increased width and thickness at the lower ends of the forearm bones, the styloid process of the radius being especially prominent. From the wrist upwards there was a general shelving away until near the elbow, above which the swelling started again in a similar manner. The bones at the elbows seemed to be enlarged irrespective of the thickening round the joints. There was no deformity of the shoulder-joints, but movement here and at the other arm-joints was impaired and somewhat painful. The feet and ankles showed similar deformities—clubbing of the terminal phalanges, fusiform swelling of the inter-phalangeal joints, and thickening at the ankles extending half way to the knees. There was some stiffness of the knee-joints. Skiagrams taken by Dr. A. H. Greg showed the bony changes typical of pulmonary osteo-arthropathy. A well-marked deposit of new bone was present in the concavities of the shafts of the first phalanges and the metacarpal bones. The deposit was largest in amount over the metacarpal bone of the thumbs and the little fingers, and in the latter situation it had a laminated appearance. The distal half of the ulnæ and radii were encased by new bone which almost obliterated the concavities of the shafts, the amount diminishing as the elbow was approached. Over the styloid process of the radius the new bone was abundant, and, as is often the case in this situation, it presented a fluffy appearance in the skiagram. The shafts of the metatarsal bones showed a definite layer of encasing new bone which was most marked on the first and fifth. On the fifth it presented the laminated appearance previously described. The shafts of the tibiæ and fibulæ were much thickened. They looked clumsy in the skiagrams and their surfaces had a wavy outline. She complained of stiffness and pain in the temporo-maxillary joints. There was no enlargement of the nose.

A temporary improvement on admission was followed by diminution of strength and other unfavourable indications. On Oct. 14th some pus containing diplococci which stained by Gram's method was removed through an exploratory puncture in the right axilla. On the 18th Mr. W. Turner removed a piece of the seventh rib at the angle of the right scapula and evacuated about two ounces of pus from a superficial cavity. From this time the patient steadily improved and on Nov. 5th breath sounds could be heard at the right base and it was noticed that the spleen was not quite so broad. When discharged on Dec. 11th she had gained 10 pounds in weight. A fortnight later the empyema wound had healed. On March 12th the general condition had still further improved and she had put on two stones in weight. At the right pulmonary base the evidence pointed to thickened pleura, and there were no abnormal physical signs anteriorly. The spleen showed an extraordinary diminution in size, and its edge could only just be felt below the costal margin. The enlargement of the thyroid had disappeared. As to the osteo-arthropathy, the clubbing and the other manifestations so far as they affected the soft parts had markedly retrogressed. The feet looked almost normal but the hands and forearms still presented the typical deformity of the disease. There was some pain in the hands and knees.

CASE 2.—A single woman, aged 21 years, was admitted at

the Royal Hospital for Diseases of the Chest on April 19th, 1906, complaining of cough and painful enlargement of the arms and legs. She had had a cough as long as she could remember, which was said to date from an attack of whooping-cough in infancy. At 14 years of age she attended at Brompton Hospital and at 18 she went to the Royal National Hospital at Ventnor. When at Ventnor the physical signs were those of excavation of the left apex and infiltration of the left lower lobe. The expectoration amounted to from one to three drachms a day and it contained tubercle bacilli. Marked clubbing of the fingers and incurving of the nails were present. Since that time she had been in the country as a domestic servant but had not lost her cough. On admission she stated that her hands and feet had always been large. She had noticed that they had been swollen from time to time for five years and that the swelling had been persistent for seven months. For four months pain had been present. The catamenia had been absent for seven months. She had had no other illness and the family history was good. On examination the patient had a good colour and was well nourished. The thyroid was not enlarged. The heart was drawn over to the left, the apex being in the fifth space one and a half inches outside the mid-clavicular line. The sounds were clear. The expansion of the left chest was diminished, and the percussion note was impaired, and the breath sounds were feeble on this side. There was evidence of excavation at the apex and in the axilla. The right lung was actively functional. The abdomen was normal, except that the spleen was palpable and its area of dulness increased. The urine was normal. The sputum was scanty and it contained a few tubercle bacilli. The limbs were markedly enlarged and deformed. The muscular prominences were obliterated, while the bony prominences were conspicuous. The subcutaneous swelling was firm, pitting only where it was most marked and then only slightly and after long pressure. The skin over the affected parts was red. In the upper extremities the swelling began in the middle of the arms and gradually increased down to the elbows which were prominent. From the elbows to the hands the forearms were almost of the same circumference, but at the lower ends bony enlargement seemed more largely to enter in. The hands were podgy and the fingers were thick and swollen. On the proximal sides of the nails there were constrictions, which with the marked curving of the nails and the clubbing made the distal phalanges spherical. The surfaces of the hands were swollen, but on the palmar side there was flattening due to loss of the muscular prominences, so that no intermediate swelling divided the palms from the wrists. In the lower extremities the changes were similar. The swelling began in the thighs, gradually increasing until the heavy-looking knees were reached. From the knees downwards the limbs were broad and clumsy. The dorsal surfaces of the feet were swollen, and the great toes were much enlarged and clubbed. The other toes were similarly affected, but the deformity was less marked from within outwards. Dr. Greg kindly took skiagrams of the case, and he reported a thin layer of periosteal new bone on most of the metacarpals, metatarsals, and proximal phalanges. In parts the new bone was very closely applied, especially towards the distal ends of the shafts of the phalanges, where it was fused with the compact layer. The radii and ulnæ had a thin layer near their lower ends. Over the tibiæ the layer of bone was of considerable thickness near the lower ends and it was so closely applied that it amounted to a thickening of the compact layer. It was much thicker in front of the bone. The femora and humeri showed no new bone and the fibulæ were doubtful in this respect.

The patient soon lost the pain and redness which were so marked on admission, but she did not at once gain ground, and the temperature ranged between 98° and 102° F. After the first month she began to gain weight and her appetite improved. The temperature became sub-febrile and the spleen could no longer be felt. On June 21st a painful effusion appeared in the knee-joints, which diminished with rest and the application of tincture of iodine. On July 9th there was stiffness of the left elbow and ten days later she still complained of pain in the affected joints. Some fluid taken from the left knee during the time of effusion was examined by Dr. J. H. Thursfield who reported as follows: "Fluid clear, with a slight whitish deposit. On centrifugalisation the deposit was found to consist almost entirely of endothelial cells and lymphocytes. There were no pus cells. No organisms were seen in the films. Cultivations showed no growth after 24 hours incubation." The patient was discharged on August 15th. The arms and legs were distinctly smaller than on admission and her general condition had improved.

These two typical cases afford further evidence in favour of the view now generally accepted that pulmonary osteo-arthropathy is a chronic inflammation due to circulating poisons. In both the osteo-arthropathy improved and the size of the spleen diminished when the disease in the chest was treated. In Case 1 an enlargement of the thyroid also disappeared. In both the œdema suggested an inflammatory œdema. It pitted with difficulty. The affected parts were painful and tender and in Case 2 actual redness was present. The lymphocytes in the synovial fluid of this patient probably indicate a chronic toxæmia, and if so they are analogous to the lymphocytes in the cerebro-spinal fluid in cases of tabes dorsalis and general paralysis. But as the patient was the subject of pulmonary tuberculosis they might be taken to indicate that the condition was tuberculous. In this connexion it is interesting to recall that Thorburn in his first paper on the subject[1] regarded pulmonary osteo-arthropathy as a tuberculous process. In Case 1 it is noteworthy how small was the empyema that was opened and yet how remarkable was the diminution in the size of the spleen and the improvement in the general condition of the patient. I am indebted to the kindness of the late Dr. Oswald A. Browne for permission to publish Case 2.

Cavendish-square, W.

A CASE OF EXCISION OF ONE KIDNEY WITH QUANTITATIVE ANALYSIS OF THE URINE.

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AND

E. P. POULTON, B.A. OXON.; AND G. H. HUNT, B.A. OXON.

Notes by Mr. Dodds-Parker.

THESE notes are placed on record as demonstrating what was practically total removal of one kidney in a young, active, and healthy individual under almost physiological conditions. Every credit is due to Mr. Poulton and Mr. Hunt for the great care and trouble which they displayed in making the quantitative analysis of the urine.

History of the case.—The patient was 22 years of age. Whilst playing Rugby football about 3.30 P.M. on March 6th, 1907, he was kicked under the left costal margin as he was falling on the ball. He had to be helped off the field and was taken back to college where he was seen by Dr. —— who ordered him to the nursing home without delay. I was called in to see him about 5 P.M. and found him lying in bed on his left side suffering much pain. The lips and face were pale and the pulse could only just be felt. On physical examination there was marked dulness in the left flank which did not shift on moving the patient; there was also dulness over the bladder and on passing a catheter almost pure blood was drawn off. There was no vomiting and liver dulness was present. I decided to explore the left kidney immediately, and at 6 P.M. explored the left renal area by the lumbar incision. I found the left kidney completely torn across its middle, from the outer border to the pelvis which was laid open. There was extensive hæmorrhage in the retro-peritoneal tissues and much blood and clot were removed. The kidney, which was now bleeding furiously, was brought out of the wound and the bleeding was controlled by pressure on the renal vessels at the hilum of the kidney. As the patient's condition, from loss of blood, was very critical, I decided to remove the kidney without delay. This having been done I put a large rubber drain in to the area of the blood clot and got the patient back to bed as soon as possible, where injections of saline

[1] Brit. Med. Jour., 1893.

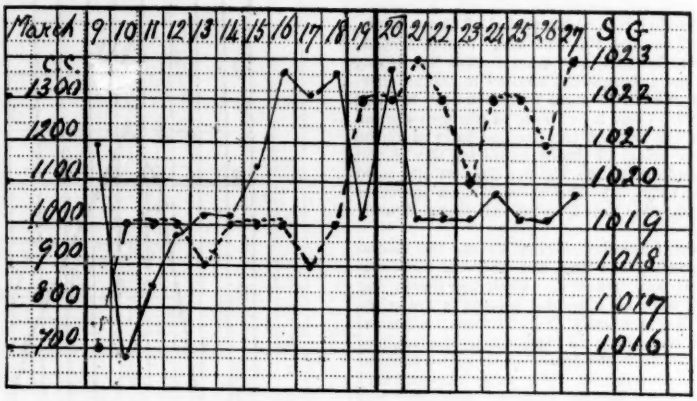
solution were given per half-pint every two hours during the night. On the next day the patient was markedly better and he made an uninterrupted recovery.

I saw the patient a year after this accident and he was in good health. I understand that he returned to America recently, where he still continues in a normal state of health.

Notes by Mr. Poulton and Mr. Hunt.

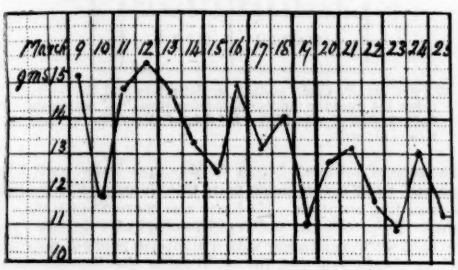
In order to ascertain the effect of removal of one kidney in a healthy subject the total daily urine was measured and

FIG. 1.



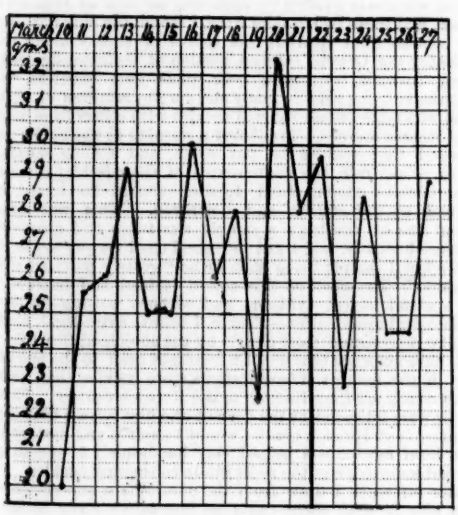
The continuous line shows the volume of urine, the broken line the specific gravity.

FIG. 2.



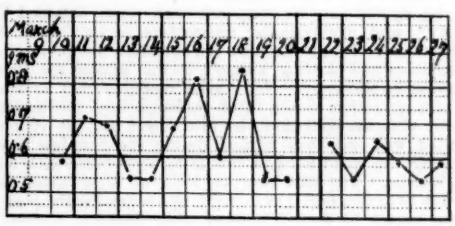
Curve showing total nitrogen secretion per diem.

FIG. 3.



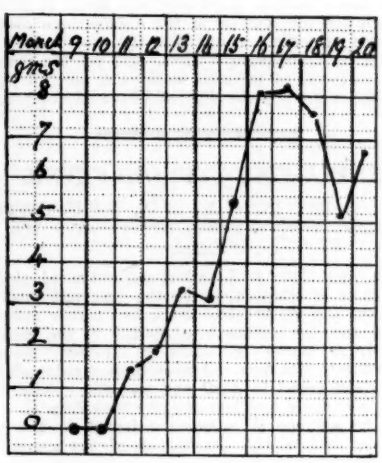
Curve showing total urea per diem.

FIG. 4.



Curve showing total uric acid per diem

FIG. 5.



Curve showing total chlorides per diem, reckoned in grammes of NaCl.

its specific gravity observed. The amounts of the following constituents were determined:—

Constituents.	Method.
1. Total nitrogen	Kjeldahl.
2. Total urea	Dupus.
3. Total uric acid	Hopkins.
4. Total chlorides	Moore.*

* By titration with $AgNO_3$, potassium chromate being used as an ndicator.

The analyses were carried out over a period of three weeks. The curves obtained showed the following characteristics. The volume of urine fell to a low value on the fourth day after the operation and subsequently showed a gradual rise. The specific gravity was low to start with but rose towards the end of the period. (Fig. 1.) The total nitrogen showed little variation from the normal, the average daily excretion during the first week being 14 grammes, during the second week 13 grammes, and during the first five days of the third week 12 grammes. (Fig. 2.) The average urea excretion during the same periods corresponded to these figures. (Fig. 3.)

The uric acid was somewhat higher during the second week (Fig. 4) than during the first, but otherwise there was nothing particular to note about it. Until the fourth day after operation there were no chlorides present in the urine, but from this day they gradually (Fig. 5) rose to a normal value. This phenomenon may be explained as the result of excessive hæmorrhage before the operation in consequence of which the chlorides were retained. The urine was examined for the presence of sugar but no reducing substance was ever obtained. Albumin was detected in traces from the beginning of the observations until March 19th. With regard to diet, the patient ate on March 11th a poached egg, some fish and minced chicken, bread and butter, also beef-tea, milk, and barley-water. From March 18th beef or mutton was generally included in the diet.

These figures may be compared with those obtained by Foshay[1] who made similar estimations in two cases of nephrectomy. In the first case the operation was performed for calculus and floating kidney; in the second for sinus following nephrotomy. His results resemble ours in that the urea excretion shows little variation from the normal directly after the operation; he also found that the volume of urine was less than normal during the first few days following the operation and this is in accordance with our observations. The fact that in none of these cases did the urea excretion fall is of interest as illustrating the power of one kidney to do the work of two. There is, however, rather an important point of difference between Foshay's cases and the one recorded above; in the former the condition of the patients was pathological, in the latter practically physiological. This pathological condition must have especially affected the remaining kidney, for, as Foshay points out, the healthy kidney had been doing extra work for some months previously, and hence it is easy to understand why the removal of the diseased one caused no fall in urea excretion; in our case the excretion had been carried on by both kidneys alike, and yet the remaining kidney was found to be able to do the work of the two kidneys before any hypertrophy could have taken place.

SHELL-FISH TYPHOID FEVER.

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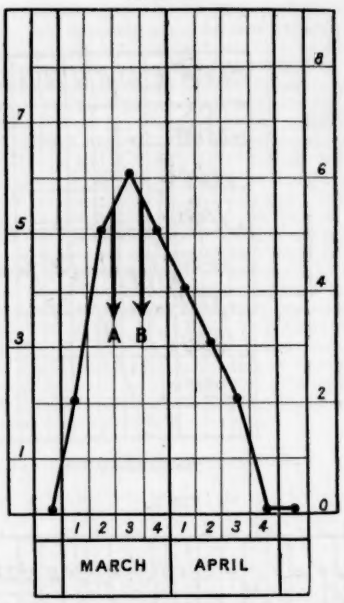
THERE were three well-marked outbreaks of shell-fish typhoid fever in Norwich during the year just concluded. These notes and charts relate to the two earlier outbreaks; the third and last outbreak attributed to the eating of mussels from Wells has already received notice in THE LANCET.[2] The first and most limited outbreak began in March and ended in April and was due chiefly, if not entirely, to mussels sent into the city from Breydon. Anyway, as the outcome of a warning issued to the public and of the seizure and destruction of the mussels, the notifications fell to zero. The epidemiological evidence was to me so clear and sufficing that I did not trouble to have any bacteriological examination made. Graphically, the story of this outbreak is represented by Chart 1.

CHART 1.



The dots signify weeks ending on Saturdays and the figures below the lines the number of notifications. "A" represents date of issue of warning; "B" date of seizure and destruction of mussels.

The second outbreak began in May and lasted until July. It proved to be a very much more troublesome affliction than the preceding eruption. Its cause was more obscure than its course. From clinical and epidemiological evidence I felt sure that we were dealing with a shell-fish typhoid fever and tried to obtain sanction for prohibiting the importation of shell-fish but was informed that there was no legal warranty for such a course. However, with an infinity of trouble I traced more than a dozen cases to cockles obtained from two shops. These shops happened to be kept by owners who were wholesale dealers in shell-fish as well as retailers of them, and these two dealers were, I found, the only importers of cockles from Ipswich, the source of supply being presumably the Orwell. Only a portion of their consignments from Ipswich were sold over their own counters, the remainder being sold to many and various retailers of shell-fish, who mixed these Ipswich cockles with others from many and various sources. I re-issued a warning to the public and advised that cockles be not eaten, and feeling satisfied as to, at any rate, the main source of the mischief directed that cockles coming from Ipswich should be seized on arrival at the station and destroyed. This was done. From one of the bags a sample was taken and examined bacteriologically, and I got thus good confirmatory evidence, this special sample being said to be "grossly polluted with sewage." The effect of this action—seizure and destruction on epidemiological evidence and without waiting for bacteriological examination—though I believe extra-legal, again can be represented most clearly by the subjoined Chart 2.

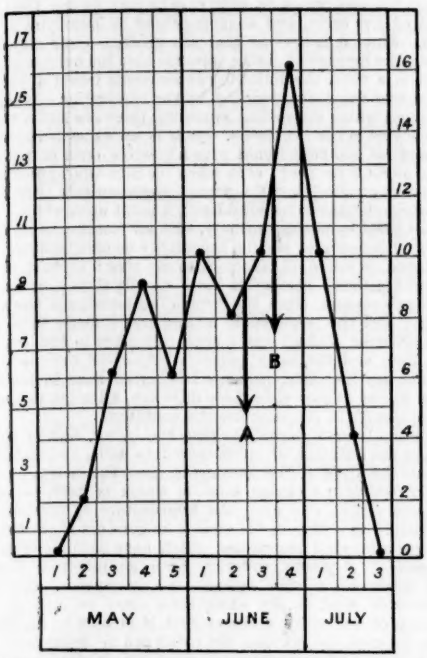
I have evidence that about a fortnight prior to the marked rise in the number of notifications more cockles than usual were consigned from Ipswich to the Norwich dealers. These latter were informed at the time of the first seizure that consignments of Ipswich cockles would be seized and destroyed. The local newspapers helped very handsomely in spreading abroad knowledge of the risks run in consuming cockles.

The inference I draw from the unfortunate experience of this city is that there exists an imperative claim to have local sanitary authorities armed with powers to prohibit the

[1] Inter. Med. M., Philadelphia, 1893, vol. ii.
[2] THE LANCET, Sept. 26th, 1908, p. 961.

importation into, or sale within, their districts of any shell-fish the safety of which there is reasonable ground to suspect, and to make it the duty of any authority which permits the exportation of shell-fish from its district to show

CHART 2.



Lines and dots have same signification as before. "A" represents date of re-issue of warning; "B" of seizure and destruction of cockles.

that every reasonable care has been taken to keep such shell-fish as are to be found within its jurisdiction free from pollution.

Norwich.

SOME COMPARATIVE MEASUREMENTS OF THE LIVES OF LEUCOCYTES[1] WHEN THE CELLS ARE RESTING IN THE PLASMATA OF DIFFERENT PERSONS,

AND THE POSSIBLE APPLICATION OF SUCH MEASUREMENTS AS AN AID TO DIAGNOSIS IN INFECTIVE DISEASE.

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OF recent years I have been endeavouring to ascertain the effect produced by one person's plasma on the life of another person's leucocytes. It appeared reasonable to suppose that the plasma of a person suffering from an infective disease would be poisonous to the leucocytes of healthy persons. If this is the case it might also be reasonable to suppose that the same plasma would not be so poisonous to the leucocytes of another person suffering from the same disease, because it is probable that the cells would be already used to, or immune against, the toxin, and furthermore that if the toxin of one infective disease differs from the toxin of another infective disease, it might be inferred that an immunity on the part of a leucocyte against one disease will not render it immune against another. Therefore, provided it is possible to tell accurately when a leucocyte is dead—that is, if one can differentiate a living from a dead cell—it also will become possible to measure the lengths of the lives of leucocytes after they have been removed from the body. And this will enable us to make comparative measurements of the lives of leucocytes when they are mixed with the plasmata of different persons. Supposing, therefore, it is true that an infected plasma shortens the lives of a healthy person's leucocytes but does not shorten the lives of the leucocytes of another person suffering from the same disease, it may be useful to reverse the process and assist in the diagnosis of infective disease by making measurements of the lives of such a patient's leucocytes when they are mixed with different plasmata. For instance, if the leucocytes of a person suffering from an indefinite infective disease are found to be easily killed by the plasmata of persons suffering from a variety of diseases but are not comparatively easily killed by the plasma of a person suffering from, say, typhoid fever, it might be inferred that the patient is suffering from, or has recently suffered from, typhoid fever, because his leucocytes are used to, or immune against, that disease.

The above is the enunciation of a problem which I set myself to solve several years ago, and this paper describes the experiments which have been conducted to investigate the last part of it—i.e., with the object of determining the actual measurements of the lives of leucocytes when they are placed in the plasmata of people who are suffering from various diseases. The earlier researches made in order to differentiate living from dead leucocytes have already been published in the *Journal of Physiology* (1)*, and the actual method employed to estimate how many living and how many dead cells there may be in a given volume of citrated blood has been described in THE LANCET of Jan. 16th, 1909 (2). This method may be again briefly summarised thus:—

Method for counting the number of living and dead leucocytes in a given sample of citrated blood.—The following solutions are prepared and a jelly is made from them. 1. A volume of Unna's polychrome methylene blue (Grübler) is diluted with two volumes of water. 2. A solution containing 2 per cent. of agar in water, filtered and sterilised. 3. An accurately neutralised solution containing 4·5 per cent. sodium citrate, 1·5 per cent. sodium chloride, and 0·225 per cent. atropine sulphate. 4. A 5 per cent. solution of sodium bicarbonate. In a test tube mix one cubic centimetre of the diluted stain, two cubic centimetres of the citrate solution, and three cubic centimetres of the molten agar solution. To this mixture a quantity of the alkaline sodium bicarbonate solution must be added in order to cause the excitant for leucocytes contained in the jelly to diffuse into the cells and the quantity added varies with the temperature of the room.[2] If measurements are going to be made in a room with a temperature of between 60° and 70° F., about 0·25 cubic centimetre of the alkaline solution should be added. The mixture is then boiled until it froths up the tube and a drop poured on to a slide and allowed to set so as to form a film. Supposing a given capillary tube contains the blood corpuscles of one person mixed with the plasma of another, the average number of living and dead leucocytes in the tube can be estimated by placing a drop of its contents on a cover-glass which is inverted and allowed to fall on the agar film. After two or three minutes the granules but not the nuclei of the living leucocytes will stain and those cells will show exaggerated amœboid movements, whereas the dead cells will remain immobile. Moreover, the dead cells may be achromatic (3), in which case they will not stain. Their nuclei may appear as a single nuclear mass, or their nuclei may even stain, or the dead cells may have undergone other changes which have been described in former papers (1, 2). Field after field should be rapidly passed in front of a 1-6th inch or equivalent objective and the number of the living and dead cells counted. Several preparations can be rapidly examined and an average struck so as to give an estimate of the number of living and dead cells in the given capillary tube. No difficulty is met with in making the counts, for living can be readily differentiated from dead cells by the presence or absence of exaggerated movements.

If all the leucocytes appear to be dead, and especially if the agar jelly has not previously been tested, it is as well to

[1] The word "leucocyte" refers to the polymorphonuclear leucocyte.

* The figures within parentheses refer to the bibliography at the end of the article.

[2] A scale has been given in the former paper.

control the measurement—that is, to see that the jelly will actually excite living cells—by placing a drop of fresh citrated blood on to another part of the same film and noting whether stimulated movements of all the leucocytes occur.

Procedure for the preparation of capillary tubes containing the plasma of one person and the leucocytes of another.—It will simplify description if the details of sterilisation and the precautions for insuring asepsis are omitted. Since the presence of bacteria shortens the lives of leucocytes (2) it is obvious that aseptic precautions are essential, but the details for sterilisation are so well known that they need hardly be repeated. A capillary tube of glass is prepared which has such a diameter that blood will run into it by capillarity and at the same time its flow can be controlled by gravity. I use a tube with a lumen of about two millimetres. 15 portions equal to each other are marked off with a pencil. The marks begin at one end of the tube which is zero, but the tube is at least two inches longer than mark 15. The portions are rendered equal by calibration with mercury, and although the length of each is immaterial, I have found that about half a centimetre is a convenient length for practical purposes and I use a tube about 13 centimetres long. A neutral solution is made which contains 3 per cent. of sodium citrate and 1 per cent. of sodium chloride. Some of this is drawn up into the tube until its upper limit or meniscus stands at mark 6. Blood from the finger of the person whose plasma is going to be tested is added until the meniscus stands at mark 12, care being taken that no bubble of air separates the two fluids. Mixture is carried out by allowing the two fluids to gravitate up and down the tube six times. The tube is sealed and centrifugalised; the blood being driven towards zero. The end remote from zero is then unsealed and the portion containing the precipitated corpuscles is separated and discarded by cutting the tube at 4. Eight portions of the tube now contain citrated plasma. If, owing to the sealing process, much of the tube has been occluded at zero the upper meniscus may stand above mark 12. This can be corrected by tapping out the excess of fluid on to a sterile slide, controlling the amount removed by the finger on the end remote from the mark 4. The lower meniscus standing at 4 where the tube has been cut, and the upper meniscus standing at 12, blood from the finger of the person whose corpuscles are going to be tested is added until the upper meniscus stands at 13 (i.e., the mixture equals 1–9). Mixture is insured as before and the tube sealed. It will be seen that although the tube contains the plasma of both persons the corpuscles are bathed in a solution containing four times as much plasma of the first person as of the second. A series of tubes may thus be made.

Appliance to insure continual mixture and to prevent the corpuscles from adhering to the glass.—If a capillary tube prepared in the way which has been described is laid on a flat surface, the corpuscles will soon gravitate to the most dependent side and will ultimately adhere to the glass. The following appliance prevents this. By means of a simple clockwork movement a split drum is made to revolve once in about three minutes. The drum is so adapted that the mouth of a long test-tube (having a diameter of one centimetre and the cavity of which is lined with a roll of blotting paper) fits accurately on to it and revolves with it. The apparatus is so arranged that the tube is horizontal and is of such a size that it can be placed in the incubator if necessary. The capillary tubes inserted into the test-tube are continually tumbling over each other by gravity as the test-tube revolves, and in so doing revolve themselves. The blood cells in their turn are continually gravitating in different directions through the citrated plasmata. It has been found that this device prevents them adhering to the glass and insures them being evenly distributed through the citrated plasmata provided the ends of the capillary tubes are not bent over when sealed. This apparatus also insures all capillary tubes being subjected to the same conditions of temperature.[3]

Procedure for measuring the lives of the leucocytes contained in the tubes.—Samples of the contents of the capillary tubes are examined on stimulating agar by the method already described. If all the cells are alive the tubes are resealed and returned to the revolving apparatus to be examined later, and so on. By this means the percentage of living and dead cells in a tube can be estimated. It is important to remember that in striking these averages only an approximate estimate can be obtained, and that therefore the greater the number of tubes made the better, as the error decreases with the greater number of leucocytes counted. In the experiments which I am about to record I have counted about 500 leucocytes in each case by making five films from each of five tubes, and counting about 20 leucocytes in each film. Since it is obvious that the greatest error may occur when the number of living approximates the number of dead cells in a tube, the following experiments would appear not to be very erroneous, judging by the application of Poisson's formula, which shows that supposing there are half a million leucocytes in the five tubes, which is an excessive estimate, a count of 500 cells would give a possible error of not more than about 6 per cent., even when the numbers approximate.

Before enumerating the actual measurements there is yet another question to be considered, a point upon which I wish to lay great emphasis—namely, that all measurements of the lives of leucocytes should necessarily be comparative. For instance, it would be fallacious to say that a typhoid plasma killed a person's leucocytes more rapidly than a septicæmic patient's plasma, when the typhoid measurement was made to-day and the septicæmic measurement made three days ago, for even if there was a great difference in the length of the lives and the same person's leucocytes were used one cannot say that that person's leucocytes were in the same state to-day as they were three days ago, although the person is apparently in the same healthy condition.

Again, I have shown (4) that the factor *heat* in accelerating the diffusion of substances into cells, also materially affects the lives of the leucocytes, since the cells are necessarily resting in a citrate solution which is itself poisonous to some extent, and even the temperature of incubators is variable. It is thus of the utmost importance that when the lives of a person's leucocytes, which have been placed in the plasma of a person suffering from an infective disease, are measured, a simultaneous measurement of the same leucocytes shed at the same time must be made in the plasma of a healthy person. And it is only by the difference between the two that the result can be determined. In other words, all measurements must be simultaneously controlled by other measurements and the contrast is the result. It is also obvious that since heat and the citrate solution both affect the lives of the cells, all tubes, whether containing infected or control plasma, must be subjected to the same conditions as regards temperature. And it is essential that the same citrate solution must be employed both for the test and the control. Unless these essential details are adhered to any measurements may be considered to be worthless. Leucocytes are very sensitive to changes in temperature when they are resting in citrate solution, but if a change occurs and all tubes are subjected to the same change the contrast in the length of life holds good. The most favourable arrangement of the citrate solution has already been given. It should be quite neutral, because if alkaline it shortens the lives of the cells.

Leucocytes appear to live longest at about 20° C. They will not live very long at 37° and at 10° will live longer than at 37° but not so long as at 20° C. I have already suggested (4) that this may be due to the accelerated absorption of the poisonous salts in the citrate solution caused by heat, and this will also explain the early death in the presence of alkali which also accelerates diffusion. I presume that the reason why they live longer at 20° than at 10° is because their normal temperature is about 37° C. and that they die in the cold in spite of the delayed absorption.

In the following experiments a temperature of 30° C. was employed with the specified citrate solution and control experiments were conducted in each case, the results given being the difference in the measurements between the test and control.

Measurements.

Length of the life of healthy person's leucocytes when resting in their own plasma.—As has been shown in a former paper (2), an average shows that all the cells are alive in 24 hours; the majority are alive in 36 hours; about 50 per cent. are dead in 48 hours; and all are dead in 86 hours.

Healthy person's leucocytes; other healthy person's plasma.—All cells were alive in 14 hours; about 50 per cent. were dead in 18 hours; the majority were dead in 22 hours; and all were usually dead in 28 hours. The difference between

[3] Messrs. Watson and Sons, Limited, 313, High Holborn, London, E.C., can supply this apparatus.

these averages may be said to be about 30 hours. I conclude that the plasma of one person is poisonous to another person's leucocytes.

Healthy person's leucocytes; plasma from cases of typhoid fever.—All cells dead in 14 hours. Difference between test and control about six hours, which is the average out of four cases.

Healthy person's leucocytes; plasma from cases of malaria.—Majority of cells dead in 16 hours, a few alive in 18 hours. Occasionally 50 per cent. were alive in 16 hours. Average difference between 12 cases and their controls about two hours.

Healthy person's leucocytes; plasma from cases of phthisis.—Majority dead in 17 hours. Average difference between five cases and their controls about one hour. Sometimes it was as much as four hours, but in very chronic cases there was little difference.

Healthy person's leucocytes; plasma from a case of osteomyelitis.—50 per cent. dead in 14 hours. Repeated with a case of gangrenous appendicitis the films showed that the majority were dead in 14 hours. The differences between these cases and their controls were five hours and three and three-quarter hours respectively.

Healthy person's leucocytes; plasma from a case of purpura hæmorrhagica.—Majority dead in 15 hours; all dead in 20 hours. Difference from controls five hours.

Healthy person's leucocytes; plasma from a case of chorea.—All cells dead in 14 hours. Difference about six hours.

Leucocytes from cases of typhoid fever; plasma from other cases of typhoid fever.—Average from three groups of cases, all of which reacted to Widal's reaction and were in the third or fourth week of the disease except one which was convalescent. These groups include the cases mentioned above. There was never a difference of more than one and a half hours between the death of the majority of cells in test and control tubes.

Leucocytes from cases of malaria; plasma from other cases of malaria.—Five cases. The majority of cells in all cases were alive in 18 hours. Practically no difference from controls.

Leucocytes from cases of phthisis; plasma from other cases of phthisis.—Four experiments. 50 per cent. dead was the average in 18 hours; very little difference from controls, sometimes the cells lived longer than in the controls.

Leucocytes from cases of malaria; plasma from cases of typhoid fever.—The majority of the cells in most instances were dead in 14 hours. Differences varied from four to six hours.

Leucocytes from cases of typhoid fever; plasma from cases of malaria.—About 50 per cent. were usually dead in 16 hours and all were dead in 20 hours in all cases. Five cases tried; average difference about three hours.

Healthy person's leucocytes; plasma from cases of carcinoma.—Seven cases; all cells alive in 16 hours; a large number alive in 20 hours. Usually there was little difference between the effect of cancer plasma and that of a healthy person.

From the foregoing measurements it would appear that in the cases which have been experimented with the plasma of persons suffering from infective diseases is poisonous to a healthy person's leucocytes and to the leucocytes of another person suffering from another disease, but is not so poisonous to the leucocytes of another person suffering from the same disease. I submit that it may be reasonable to suppose that such may be the case in other infective diseases.

Precautions.—In comparing the lengths of the lives of leucocytes of persons suffering from chronic infective diseases both in another infected person's plasma and in healthy plasma, I have frequently found that such cells will not live so long as the cells of healthy persons subjected to the same conditions. This was further investigated by comparing the lives of leucocytes taken from cases of chronic illnesses in their own plasmata with the length of the lives of the cells of healthy persons in their own healthy plasmata. In cases of chronic phthisis, malaria, Hodgkin's disease,[4] &c., I have found that the leucocytes will not live even in their own plasma nearly so long as if they belonged to a healthy person, as much as a day's difference having been observed; and we may infer that these diseases, and probably others also, cause a loss of vitality in the patients' leucocytes, so that by this procedure the loss of vitality can be measured. It is important to remember this point, for if the making of a measurement is delayed it may be found that all the cells are dead in both control and test preparations. This method of measuring the lives of leucocytes may also prove of value in prognosis as well as in diagnosis.

I do not think that any difficulty will be met with in making the counts, with the exception of a possible one caused by the agglutination of the leucocytes. Occasionally large clumps are met with. If the cells are clumped, however, it does not necessarily follow that they are dead, far from it, for they may be very active, though I am of opinion that if clumped death will soon occur. The cells in a clump can generally be counted. Ruptured cells are counted as dead. If bacteria are seen in large numbers in a film the capillary tube is discarded. The revolving apparatus is not essential but more constant results have been obtained by its use. As far as possible I have purposely avoided handling the blood of the person whose leucocytes are to be tested, for fear of injuring the cells. The variations of the alkalinity of the plasma may, I think, be neglected, as it is not sufficient materially to alter the length of the lives of the cells. This is borne out by the experiments with cancer plasma, because that plasma is more alkaline than normal and yet does not shorten life.

Summary.

I fear that it is too early to arrive at any definite conclusions from so small a number of experiments, but I think that their publication is justified in order to explain the method employed and because the results are sufficiently promising to warrant further investigation, though the work must still be regarded as being in the experimental stage. I hope that this method will be tried by others, as the problem given in the enunciation may lead to important developments, and especially as this kind of research involves the striking of averages and a large amount of experiment to determine the points. The method may also be useful to others studying other branches of immunity. As I have already stated, my aim is to be able to assist in the diagnosis of infective disease by this method, but a large amount of material will be required before one can determine its value in this direction, and I have mentioned its possibilities with reference to prognosis. The stage in a disease in which measurable immunity appears in a leucocyte also remains to be determined.

To summarise the method by which I endeavour to assist in a diagnosis in a case of infective disease, a small quantity of blood from a patient is mixed with eight times its volume of the citrated plasma of other persons who are known to be suffering from certain infective diseases and also with the citrated plasma of a healthy person. For this last purpose I sometimes use my own plasma. The method has been described. The capillary tubes are kept together in the revolving apparatus for about 14 hours. Then some agar films are prepared from jelly which will excite movements in living leucocytes and samples of the contents of the tubes are examined on these films. The number of living and dead cells are averaged and the difference between the lengths of the lives of the cells when resting in healthy and infected plasmata are determined. When an infected plasma is found which will not comparatively shorten the lives of the patient's leucocytes, it seems probable that the patient is suffering from the same disease as the person from whom the plasma was taken. I generally confirm this procedure by reversing the process and trying the patient's plasma on the leucocytes of other persons suffering from the disease determined, taking care to make controls in this case as well as in the first by making measurements with healthy plasma and with the plasma of persons suffering from other diseases.

The method described in this paper has two disadvantages: first, in keeping the tubes at 30° C., and, secondly, in counting 500 leucocytes in each case, which is most tedious. The rest of the method takes very little time; collecting the plasmata and mixing them with the patient's corpuscles is soon accomplished, and when the tubes are in the revolving apparatus they require no further attention until the time has come to estimate the number of living and dead cells in them. The agar jelly can be made from stock solutions as specified and kept in test-tubes for months as moulds will

[4] It has been noticed that stain will diffuse more readily into the blood cells of these patients—that is, that these diseases, and probably other chronic illnesses, cause a lowered "coefficient of diffusion" in blood corpuscles.

not grow on it. Films are rapidly prepared by boiling the jelly in a tube in a spirit-lamp flame.

With regard to the two disadvantages, an incubator working at 30° C. is not usually within reach even in laboratories, although Hearson's apparatus will maintain this temperature if fitted with a special capsule. Since my aim is to make this possible diagnostic method suitable for practical purposes even away from the vicinity of a laboratory, I dispense with an incubator and employ the ordinary temperature of a room, say between 60° and 70° F. In order to do this the citrate solution is modified. If the solution already specified were used at such a temperature the leucocytes might live for a long time even in an infected plasma, and a day or two might elapse before sufficient deaths occurred among the cells to make a contrast. Consequently I deliberately shorten the life of the cells by using a solution containing 1·2 per cent. sodium citrate and 1 per cent. sodium chloride. As the same solution is employed for all tubes the artificial shortening of life does not appear to vitiate the results. There are several ways by which this shortening of life can be accomplished, though I consider the lowering of the sodium citrate content to be the most suitable. Using this solution it has been found that the majority of healthy cells in another healthy person's plasma are dead in about 24 hours if kept at the room temperature, which, of course, may be variable. So a contrast can usually be obtained within 24 hours of mixing the bloods. With regard to the second disadvantage, I hope by experiment to ascertain the minimum number of leucocytes which it may be necessary to count to obtain a trustworthy average. I am sure that a smaller number than 500 will be sufficient. I am also experimenting with a greater concentration of plasma with a view of obtaining a wider contrast between the length of the lives of cells in healthy and infected plasma.

In conclusion, I wish to suggest that this method may also be useful from a medico-legal aspect, for I have found the leucocytes alive in the blood removed from the hearts of bodies which have been lying in the mortuary for 24 hours or more, and it may be possible to state how long a person has been dead by estimating the percentage of living cells so many hours after the death of the subject.

Bibliography.—H. C. Ross: (1) On the Death of Leucocytes, Journal of Physiology, vol. xxxvii., 1908, p. 327; (2) On a Combination of Substances which Excites Amœboid Movements in Leucocytes, THE LANCET, Jan. 16th, 1909, p. 152; (3) On the Cause of Achromasia in Leucocytes, THE LANCET, Jan. 23rd, 1909, p. 226; (4) On the Modification of the Excitant for Leucocytes composed of Methylene Blue and Atropine, THE LANCET, Jan. 30th, 1909, p. 313.

Liverpool.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF OBSTRUCTION OF THE BOWELS, AT FIRST SIMULATING GASTRIC ULCER.

BY D. M. MACDONALD, M.D. ABERD.

THE patient was a thin, wiry-looking woman, aged 34 years, who had had no children. She complained of pain in the epigastrium with persistent vomiting. In February, 1907, she had an attack of dyspepsia with pain over the stomach which gradually abated under treatment. She was next seen by me on Dec. 6th. She was taken ill on that day while out at farm work and took to bed complaining of pain in the epigastrium, which she said came out at the back, and constant vomiting. The vomit consisted first of food, then of partially digested blood, and ultimately of blood itself. She was given morphine subcutaneously and was fed on milk and lime-water for a few days. The pain soon became tolerable and the vomiting almost disappeared. The bowels were moved by injection. There was melæna at the time. All this time the abdomen was exquisitely tender to touch in the epigastrium and slightly so over the descending colon. Up to now the temperature and pulse were normal. A week after the initial illness the patient one morning developed acute pain over the abdomen generally, which was tympanitic and extremely tender. Vomiting was constant and consisted largely of bilious matter, brownish-black in colour, and of which a pint would sometimes be vomited at a time. The enema yielded no result and peristaltic action was visible through the abdominal walls. The pulse was now 120 and the temperature was 96° F. I saw the patient about 4 o'clock that afternoon. Vomiting was still persistent and her face had a sunken anxious look. The appearance, nevertheless, at this stage suggested more an obstruction than a rupture of the bowels. The pulse was of fair volume and she lay on her side with her legs drawn up. In consultation with Mr. A. Don of Dundee it was decided that the case was one for laparotomy. On his opening the abdominal cavity, under chloroform, there was a little free clear serous fluid which at once negatived a serious bowel rupture. The stomach and upper part of the cavity were first explored, but nothing was found to account for the serious condition. The intestines were filled with gas, especially the descending colon. Attention was next directed to the lower part of the cavity where many adhesions in the pelvis were found. The omentum was first freed from the pelvis and ligatured and cut away opposite the abdominal wound. The bowels were then freed in the pelvic cavity, the adhesions being recent with the exception of a loop which seemed to be firmly fixed to the apex of the bladder. This was not interfered with. The appendix and other organs were normal and there did not seem to have been any hernia.

The probable explanation of the pain in the left side, which was what the patient complained of most when I saw her in the afternoon before operation, would seem to be that the colon, probably its sigmoid flexure, was bound down by the omentum or some of the adherent coils of intestine, and that a reverse peristaltic action was causing pain over the splenic flexure. Another explanation of the pain would be that the dragging on the omentum caused by the peristalsis of the bowels to which it was adherent would be exerted on its fixed point in the epigastrium and splenic omentum and this would account for the most severe pain being in that region.

The patient made a complete recovery from her illness, though the pain continued for some days on the left side. There was no vomiting subsequent to the operation.

Dunkeld, N.B.

TRAUMATIC NASAL FISTULA.

BY SOMERTON CLARK, F.R.C.S. EDIN.,
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THE patient, a male Afghan, aged 50 years, was admitted to hospital on Nov. 28th, 1907, with the history that as he was grazing flocks near the Mohmand country six months previously, the Mohmands attempted to carry off his property and a fight ensued during which he received a blow from a stone in the face under the left eye, driving in the maxillary bone. On admission he was found to have a wedge-shaped piece of bone 1½ inches long jammed in the junction of the nasal and superior maxillary bones. This was removed by lion forceps and the skin edges, which were very friable, were undermined and brought together. Owing to tension on the flaps union was only partial, and so six weeks later a second operation was performed. After this a fistula of the size of a pin's head remained and the patient went to his own country. On his return the fistula was of the size of a quill. He was again admitted. This time a piece of skin was dissected from over the lacrymal bone and turned over so as to form a lining membrane for the left nasal cavity. By this method tension was avoided. The flap was inserted into a slit on the nasal side of the fistula. The patient left hospital on Dec. 16th, 1908, with the fistula completely closed.

Dera Ismail Khan, India.

ROYAL MEDICAL SOCIETY OF EDINBURGH.—At a meeting of this society, held on Jan. 29th, Dr. John Gilmour being in the chair, Dr. J. G. Greenfield read a dissertation on Lead Poisoning. At the outset Dr. Greenfield referred to the great prevalence of lead poisoning at the present time and to the inadequate prophylactic measures which are often taken. He went on to describe the symptoms of lead poisoning, dealing especially with the nervous phenomena and showing how the latter might simulate many nervous diseases. Dr. Greenfield was heartily thanked for his paper.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

Ulcerative Colitis.

A MEETING of this section was held on Jan. 26th, Sir LAUDER BRUNTON being in the chair.

Sir WILLIAM H. ALLCHIN said that the morbid condition known as "Ulcerative Colitis" had the prefix "general" or "simple" frequently applied to it and sometimes also the term "sporadic." The designation was sufficiently precise, so far as it expressed the structural changes met with, but was clearly open to the objection that there were several other affections of the large intestine, quite distinct from the one to be considered to which the name might on anatomical grounds be given with equal propriety. It was a provisional title, therefore, and its future retention or rejection would be largely determined by a clearing up of certain points in connexion with the natural history of the disease. The term "dysentery," it might be observed, was open to the same criticism on the clinical side. It should be remembered that epidemics of dysentery had been unknown in Great Britain for more than 50 years, excepting such as had occurred in asylums, and a small outbreak in 1901 among the troops at Aldershot, which was supposed to have been introduced from South Africa. By far the greater number of cases occurred during early adult and middle life, and whilst a few were met with over 60 years of age, youth appeared to be singularly free. Only very occasionally was the disease recorded as arising in children and infants, and it was a question whether it was of the same nature as that set up in older persons. Information on that point from those whose experience was derived from children's hospitals was much to be desired, for although a diarrhœa characterised by the passage of blood and slime was far from uncommon in infants and children and was frequently fatal, he had never seen post mortem the appearance in the large intestine in any way resembling that which was constant in the disease which they were now considering. In passing, it might be observed that "all ages from the nursling to extreme old age paid their tribute to dysentery. In some of the European epidemics nearly half the attacks, and rather more than half the deaths, had been among children." The disease known as dysentery and presenting the essential clinical, anatomical, and bacteriological features of that malady was by no means confined to tropical regions. Endemic dysentery was met with in warm climates only; dysentery in the fullest sense of the word was a ubiquitous disease, being met with in every inhabited region of the globe, from the Equator to the Arctic Circle. As a predisposing or even a determining cause of sporadic ulcerative colitis previous residence in a hot country had not, therefore, so great an importance as it was sometimes supposed. The occupations of patients seemed to exert no influence whatever on the determination of the disease. And almost the same statement might be made with respect to the occurrence of previous illness, a very large proportion of the cases having been well-to-do. It was somewhat remarkable that there was so little evidence of the connexion of sporadic ulcerative colitis with chronic interstitial nephritis or with gout, an association that Dr. W. Hale White affirmed had long been known. The association between the two morbid conditions would appear to be of a twofold character: in the one group the ulcerative colitis developed, so to say, by chance in the chronic renal patient, presumably as an infection, ran its usual course, and was most commonly the cause of death; in the other group the ulceration of the mucosa of the colon was a terminal incident in the progress of the kidney affection, such as might develop in other mucous membranes, and if not actually overshadowed by the manifestations of the primary malady was subordinate in importance, death being due to uræmia or some other concomitant of the kidney changes. Ulcerative colitis was characterised clinically by well-marked symptoms that occurred on the whole with such collective constancy as to render the diagnosis in any given case more than probable, the resemblance to conditions other than ulceration of the colon being but slight. Only sometimes were there any symptoms preliminary to those connected with the intestinal lesion, such as malaise, headache, and pain in the back and limbs, such as occurred in other acute febrile complaints. By far the most frequently a sudden looseness of the bowels or passage of blood marked the onset of the disease. Although occasionally there might be some constipation at the outset, a diarrhœa of varying degrees of severity was soon, if not at once, established. There might be but two or three motions or as many as a dozen or 20 in the 24 hours, but there was never that constant and distressing desire to go to stool which was so marked a feature of tropical dysentery. Nor were short periods of confined bowels interrupting the course of the diarrhœa unknown, a circumstance which he was not aware was ever noticed in the epidemic disorder. Except perhaps at the very commencement of the illness or in the course of any intervening period of constipation, the motions were fluid, dark from abundant bile-derived pigments, singularly fœtid though scarcely of the putrid odour so common in tropical dysentery and containing much or little blood, altered or almost pure, and a variable excess of mucus. It might be noted that the presence of blood in the stools was not to be taken as absolutely indicative of ulceration although that was most likely, since a hæmorrhage from the mucosa might occur from the hyperæmia of inflammation before the actual destruction of tissue took place. With regard to the blood that was voided he did not know that it offered any distinctive feature either in quantity or in extent of admixture with the other constituents of the motion from what was observed in tropical dysentery, but very seldom did the stool consist of blood and mucus only as was so common in the epidemic malady, and still less was it constantly composed of only a small pellet of clear or blood-stained mucus passed with agonising straining and tenesmus which was so distinguishing a manifestation of the latter disease. The records before them, however, showed that now and then undoubted ulceration of the bowel might exist and yet no appreciable blood appeared in the dejecta, a circumstance that was not infrequently to be noted with similar lesions in other parts of the alimentary canal. Fragments and shreds of slough cast off from the bowels were sometimes recognisable and pus occasionally. Associated with the diarrhœa was pain, but the constancy of the association was most uncertain. Without doubt pain, often very severe and of a paroxysmal griping character, was the more usual, but equally cases were described in which there was little more than a scarcely appreciable discomfort. When present it was but slightly affected by the taking of food, but was apt to be induced and intensified by the action of the bowels. Whilst generally diffused over the front of the abdomen the pain was sometimes distinctly perceived along the course of the colon and in that respect might be accompanied by tenderness. It had, he thought, hitherto been generally supposed that tenesmus, which was such a distressing, prominent, and distinguishing feature of tropical dysentery, was altogether wanting in those cases of sporadic ulceration of the colon, but the information which had been collected for them showed that that was not so, the symptoms having been noticed at several of the hospitals in more than one case; indeed, *a priori* tenesmus might have been expected to occur since the anatomical changes even to involving the anus were identical with those of the dysentery of hot climates. It might be remarked, however, that Gemmell in his classical account of asylum epidemics, said, "Tenesmus may or may not be present and is often slight." Except that the symptom was less frequent in the sporadic affection it did not seem that any distinction could be drawn. Among the other symptoms presented by the sufferer from that complaint none were of sufficient constancy as to be of diagnostic value, nor with the information before them did it seem that any individually contributed much towards prognosis, however significant they might be in combination. Nor was the severity or otherwise of the symptoms generally to be regarded as an index of the extent of the intestinal lesion. Thus vomiting was of most uncertain occurrence, sometimes very severe at the outset of the disease, oftener only slight, and oftenest of all was absent throughout. An associated nausea had been noticed. It seemed that the administration of enemata sometimes determined the sickness or intensified it if present. All conditions of the tongue had been noted from the clean

and normal to one that was dry, cracked, and glazed. Parotitis and parotid bubo had also been noticed more than once. The abdomen might be normal in contour, distended or retracted, and intestinal peristalsis was sometimes visible. Equally variable was the general condition of the patient, for although in all cases he was obviously ill, and often gravely so, it was not very uncommon for the appetite to be good and the nutrition to be well maintained, though some loss of weight even to emaciation was the rule. Many exhibited a febrile state from the first and throughout the illness; other manifested pyrexial exacerbations in the course of the complaint; whilst in many there was no rise of temperature at any time. The curve was frequently of the intermittent type and might reach 104° F., although a lower maximum, 102° or 103°, was more usual. Profuse sweating occasionally happened and due to that and to the diarrhœa thirst might be complained of. Anæmia from loss of blood or the severity of the illness might be so profound as to suggest that it was of a pernicious type. A review of the records showed the greatest variety in the duration of the symptoms, from one that was fatal in three days from the onset, mentioned by Dr. Hale White, to others that had lasted continuously for upwards of two years or with intermissions of more or less complete health for 10 or even 18 years. The malady from that aspect appeared to be separable into groups—those which might be termed acute continuing for the most part for six or eight weeks, and others of a more chronic character where the symptoms might extend over years, broken by acute outbreaks to which the termination might ultimately be due. The intervals during which the manifestations of the disease subsided might be marked only by a long-continued anæmia or by an easily induced diarrhœa, or there might be no evidence of ill-health, and then after some months a relapse might occur, again to pass off and perhaps again to recur. The liability to relapse was undoubted, and in that resembled also the tropical affection, and hence considerable hesitation must be expressed as to the future of any case that might seemingly be cured. The majority of cases ran their course to death or recovery uncomplicated by association with other forms of disease which were of accidental occurrence when present. The malady was a distinctly marked-out one and, so to say, self-contained. At the same time, it was recognised that ulceration of the colon with the general features, both clinical and anatomical, of the specific affection was liable to develop as a terminal event in other morbid states, one of which—chronic interstitial nephritis—had already been referred to. Incidental to the ulceration peritonitis might be set up consequent upon perforation of the gut, though in view of the extensive nature of the lesions it was remarkable that that complication was not of more frequent occurrence. A liability to embolism in the pulmonary vessels and elsewhere had also been noticed. Hepatic abscess was certainly a rare event in connexion with ulcerative colitis. A like infrequency of association of liver abscess with the epidemic dysentery of temperate climates and of asylums was well known. Sporadic ulcerative colitis in its outlook was most grave. The mortality was about equal in the two sexes and no special liability to death or recovery seemed to be conferred by any age. There was a distinctly higher percentage of fatal cases than obtained in tropical dysentery. But although the expectation of death was so high recovery might follow even when the disease had run a comparatively acute and severe course. That circumstance made the prognosis very uncertain in any individual case, but the severity of the hæmorrhage and of the diarrhœa, the presence of tympanites and extreme prostration, and the typhoid state were manifestly ominous. The *primâ-facie* resemblance of sporadic ulcerative colitis to epidemic dysentery at once pointed to the infective nature of the disease and raised the question of the specificity of the causal organism. It would, he presumed, be generally accepted that some type of the bacillus dysenteriæ, whether the Shiga, Flexner, or other, stood in that relation to the tropical disease, whatever might be the influence of the amœba. In the bacteriological evidence connected with sporadic ulcerative colitis, they found far greater contradiction than obtained in respect to either the tropical or the asylum variety of dysentery. There arose to his mind that question which so frequently presented itself in connexion with investigations of that character, were they not prone in the search for a specific causal organism to overlook somewhat the contributory part played by the individual's own tissues, a factor in bringing about the result which even should be reckoned with when the actual infection was clearly ascertained. Surely there must be something more than the invasion of the microbe concerned when they found the specific bacillus dysenteriæ responsible, on the one hand, for the severe and fatal malady which they called tropical dysentery, and was also found in almost all children who suffered from diarrhœal diseases, in many of whom the symptoms were mild and transient and clinically of no consequence. Moreover, that diarrhœal affection did not present the appearance of an epidemic disease. The methods of treatment must be looked upon as far from satisfactory. It had been towards controlling the two prominent symptoms diarrhœa and hæmorrhage that efforts had been mainly directed, but whatever success might have attended those efforts in individual cases a consideration of the extensive and serious intestinal lesions which underlay those manifestations gave but little ground for anticipating any frequency of cure by those methods only. Numberless had been the drugs, astringents, antiseptics, and sedatives that had been administered by the mouth with little or no assured benefit; frequently repeated small doses of calomel or grey powder combined with opium were certainly most to be recommended, and recovery had no doubt followed such a line of treatment. Ipecacuanha did not seem to have been as useful as it had been found to be in certain cases of tropical dysentery, nor had saline drugs proved as beneficial, although cases might be pointed to as justifying their use. Much greater success was reported by Dr. Gemmell as having followed full doses of quinine in the epidemic disease in asylums. With a view of treating the local condition of the bowel and so leading to abatement of the diarrhœa and bleeding rectal injections had been extensively employed, some small in bulk, such as starch and opium or tincture of hamamelis, or more recently adrenalin; others larger in quantity and slowly introduced with the object of bringing the drug in contact with as large a surface as possible of the inflamed bowel. Boric acid in saturated or dilute solutions had been employed either alone or preparatory to the injection of some other medicament such as nitrate of silver, one drachm or one and a half drachms of which to three pints of warm water was advocated by Sir Stephen Mackenzie so long ago as 1882. Solutions of the perchloride or of the pernitrate of iron had been used in the same way and lately large enemata of a 1 per cent. solution of argyrol had been highly extolled. Excellent as those measures might have been in intention their frequent failure to effect any improvement had prevented their being regarded as other than very uncertain remedies. As a means, however, of bringing applications of that character more effectively to the ulcerated surface, and what was of equal if not of greater importance to divert the intestinal contents with their irritant and toxic ingredients, the cæcum or ascending colon had been opened and an artificial anus established. Such procedure permitted a very satisfactory irrigation of the colon from above by antiseptic solutions, such as permanganate of potassium (1 in 10,000), boric acid, creolin, &c. Scattered throughout the medical journals were accounts of cases thus treated most successfully, but although offering the prospect of considerable benefit it could not be said that the records were sufficiently numerous to allow them to estimate its exact value as a therapeutic measure. More recently appendicostomy had been recommended as doing away with the undoubted objections to colotomy and as affording an equally convenient means for irrigation, although it obviously did not prevent the passage of the bowel contents over the ulcerated surface, which appeared to be very desirable to avoid. The growing knowledge of the bacteriology of the complaint had suggested fresh lines for the pursuance of treatment, but until that knowledge was more precise such courses must be tentative. To that end both anti-dysenteric serum and bacillus coli vaccine had been tried and, as he could testify from experience of the latter, with marked benefit. It was not, however, until a larger body of evidence on that point was available that any conclusions could be drawn; the few cases hitherto recorded were quite insufficient to base any opinion on. It need scarcely be added that the lately introduced preparations of lactic acid ferments had found their advocates as remedies for that particular affection. Whatever plan or combination of plans might be adopted it was obvious that the greatest attention must be paid to the general treatment of the patient. Complete rest

and warmth were essential and where pain was considerable fomentations or other forms of hot application were matters of routine; vomiting might be allayed by hydrocyanic acid in an effervescing draught repeated every few hours, by minim doses of tincture of iodine, or other recognised measures; and for the hiccough opium was to be regarded as most efficacious. Since the appetite was often good and the digestive capability of the upper parts of the canal often appeared but slightly, if at all, impaired, a small quantity of digestible solid food was to his mind preferable to a wholly slop diet, and that as much food as could be well borne was desirable was evident when the exhausting nature of the malady was remembered. Anæmia and other complications required their appropriate treatment and strychnine, alcohol, or other stimulants would most probably be required.

Mr. G. H. MAKINS said that his experience of the surgical treatment of the condition was distinctly in favour of a simple colostomy performed on the ascending colon. When the question arose in the subsequent treatment of a case after colostomy and the closure was under consideration he advised temporarily diverting the fæces by a tube and then an opportunity was afforded of judging whether the re-entrance of the fæces produced fresh symptoms. If fresh symptoms arose then delay must occur before a closure was attempted. He considered that after about seven months a colostomy must remain permanent because of the contracture of the colon rendering it difficult to do anything in the way of anastomosis.

Dr. HALE WHITE pointed out the importance of recognising instances of vascular ulcers of the intestine. It was not uncommon to get severe ulceration of the colon from pyæmia. There was a distinct group of cases classed under the term of ulcerative colitis in which there were definite symptoms enabling the practitioner to predict that the colon would be found in an ulcerated condition. His own opinion in regard to the relation between ulcerative colitis and dysentery was that the facts had not been proven. The cases of dysentery he had seen in the tropics were clinically quite unlike cases of ulcerative colitis. In regard to treatment his experience of rectal irrigation was not very favourable. It was difficult to decide in which cases surgery should be undertaken. He had had three consecutive cases with recovery in which the patients were treated with milk soured with a trustworthy agent. The patients were kept in bed and fed on a slop diet and the soured milk was given in large quantities up to three pints a day in addition to ordinary milk.

The discussion was then adjourned to Feb. 10th.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Histology of the Smaller Myomata.—Case of Abdominal Hysterectomy for Cancer of the Cervix: Remote Results and Post-mortem Findings.—Rôle of the Perineal Body in Labour.

A MEETING of this section was held on Jan. 14th, Dr. HERBERT R. SPENCER, the President, being in the chair.

Dr. FLORENCE E. WILLEY read a short communication on the Histology of the Smaller Myomata. Reference was made to the fact that the more recent theories have claimed that fibro-myomata originated by proliferation of the cells forming the coats of arteries or capillaries, and that the muscle fibres are arranged concentrically round a central vessel. Sections of young myomata, from five millimetres in diameter upwards, were shown and the following conclusions were arrived at. That fibro-myomata arose as irregular patches of proliferation of muscle cells of the uterine parenchyma, which had no special relation to the vascular system. The cause of this proliferation was unknown, but the absence of growing tumours before puberty and after the menopause suggested some relation to the activity of the sexual organs.—The PRESIDENT said that he could corroborate Dr. Willey's statements as to the absence of capsules in many small fibroids and he had been surprised to hear it asserted that they always had capsules. He asked whether Dr. Willey had examined microscopically some of the curious minute fibroids sometimes seen beneath the peritoneum which had the appearance of keloid scars.—Dr. HEYWOOD SMITH and Dr. MACNAUGHTON-JONES spoke and Dr. WILLEY replied.

In a short communication Mrs. STANLEY BOYD, M.D., gave the remote results and post-mortem findings four and a half years after operation in a case of Abdominal Hysterectomy for Cancer of the Cervix followed by vesico-vaginal fistula. The case was an early one and, except for adhesions about the appendages and some tough, fibrous tissue in the neighbourhood of the bladder, favourable for a radical operation. Vesico-vaginal fistula developed six days after the operation, but was small, and gave the patient comparatively slight inconvenience, so that she persistently declined operation for its closure. The case was watched for four and a half years, during which time there were intermittent attacks of pyuria, which were attributed to suppuration in the neighbourhood of the bladder bursting into it. In August last the patient was admitted into the Great Northern Central Hospital with suppuration about the right kidney, under Mr. Peyton T. B. Beale, too ill for anything but incision of abscesses and palliative treatment. She died on Sept. 12th, 1908. The post-mortem examination showed no recurrence of growth but complete occlusion of the right ureter at its vesical end, where it was imbedded in a mass of cicatricial tissue, right pyonephrosis, perinephric suppuration, subdiaphragmatic abscess, and right empyema.—The PRESIDENT said that the publication of after-histories was of great value, especially in cases of carcinoma. It was unfortunate that a microscopic examination was not made of the fibrous tissue around the ureter and of the glands. He had often wondered what happened to patients with ureteral fistulæ when the fistulæ closed, as Wertheim had shown that they frequently did, and whether the extensive removal of the tissues around the ureters might not lead to cicatricial obstruction of these tubes.—Dr. A. H. N. LEWERS said that he had had a case of vaginal hysterectomy for carcinoma of the body of the uterus many years ago in which a ureteral fistula had developed. Nothing of an active kind was done for it and some months later the fistula healed. The patient was seen several times subsequently and there was no evidence of anything wrong with the kidney.—Dr. G. F. BLACKER stated that he had had three cases of ureteral fistula occurring after total abdominal hysterectomy. In the first case, owing to septic changes, the corresponding kidney had to be removed, and this was followed by complete recovery. The second case developed an attack of acute suppression of urine, lasting 24 hours, about five weeks after the operation. This passed off and the patient recovered, and the fistula healed. In the third case the patient developed a high temperature a month after the operation and the bacillus coli was found in the urine. Eight weeks after the original operation the patient died with symptoms of pyæmia, and at the post-mortem examination a small abscess was found at the site of the fistula.—Mrs. STANLEY BOYD replied.

Dr. R. H. PARAMORE read a paper on the Rôle of the Perineal Body in Labour. He stated that the perineal body played no part in the support of the viscera, nor did its rupture facilitate prolapse. Yet the perineal body exercised a far-reaching influence during child-birth which was neither necessary nor good. In the descent of the fœtal head through the outlet of the pelvis, the pelvic floor became transformed into a broad gutter-like declivity, at the lower end of which the posterior commissure of the pubo-rectalis muscle was found. The dilatation of the anus and the increase in length of the base of the perineal body showed how much the tissues below the pelvic floor stretched. The tension of these thinned-out perineal tissues determined the more forward projection of the anterior segment of the head, the head being ovoid in shape. If the vulvar aperture was destroyed by a laceration, the movement forward of the anterior segment of the head did not occur. It was evident that a perineal tear by allowing birth with the least possible distension of the muscle might undoubtedly in many cases prevent an injury which predisposed to prolapse. An early perineal tear might be a blessing in disguise. Perineal tears, when they did not involve the sphincter, were trifling injuries, and the only reasons for suturing them were to check hæmorrhage and to prevent infection. The main mass of the pelvic floor musculature passed behind the anal canal and remained intact in spite of such a tear. The continued extension of the head could be prevented by adopting the method of Toff. When the head appeared at the vulva two fingers were placed between it and the pubes and traction was exerted backwards. Simultaneously the head might be pressed downwards and forwards from above the anus.

SECTION OF LARYNGOLOGY.

Discussion on the Modern Treatment of Syphilis, especially with regard to the Upper Respiratory Passages.

A MEETING of this section was held on Jan. 8th, Dr. J. DUNDAS GRANT, the President, being in the chair.

Dr. LIEVEN (Aix-la-Chapelle) opened a discussion upon the Modern Treatment of Syphilis, especially with regard to the Upper Respiratory Passages. He referred to the recent advances in syphilology, including the identification of the spirochæta pallida and the detection of specific antibodies in the serum of people infected with syphilis. No serotherapeutic treatment had, however, been found effective. The chief remedies were still mercury and iodides. Mercury had been proved by Neisser by experiments on anthropoid apes to assist the organism to defend itself against the spirochæta and also to kill the microbe. Atoxyl was found experimentally to produce the same results but if given in sufficiently large doses to be effective it was dangerous to the optic nerve. In regard to the administration of mercury, Dr. Lieven opposed the oral method and advocated inunction and subcutaneous or intra-muscular injections. He compared the advantage of soluble and insoluble salts for injection. His preference was for calomel so far as effectiveness was concerned, but he reserved it for the malignant forms, the salicylate being more suitable for the routine treatment. These salts should be avoided in case of Bright's disease or diabetes. He considered inunction to be the method which combined the greatest therapeutical effect with the least danger. It was better tolerated if combined with baths of soap and sulphur. The secretions of the sebaceous and sweat glands rendered it capable of being absorbed and of circulating in the body as an albuminate. Stomatitis was best combated by brushing the teeth after each meal with a paste of salol and chlorate of potassium and by rinsing the mouth every hour with a solution of acetico-tartrate of aluminium. Iodides were most useful in tertiary manifestations but were also effective against secondary vegetating patches at the entrance of the nasal passages and on the floor of the nose. Iodism was often removed by the daily administration of 15 grains of sulphanilic acid in seven ounces of water. Sajodin or iodipin might be substituted for those who were very sensitive to iodides. Dr. Lieven thought that there was not yet sufficient evidence in favour of treatment by means of the various arsenical preparations. Before treatment was commenced the diagnosis should be certain, and in doubtful cases the spirochæta should be found or time should be given for the serum test or for the appearance of a roseola. Inunctions or injections should then be given, in most cases no local treatment being necessary. Chancres on the lips or face might be covered with mercurial plaster; those inside the nose or mouth should not be cauterised but simply dusted with nosophen or, for pain, orthoform. Secondary ulcerative patches might be painted with a concentrated solution of chromic acid and over this a 10 per cent. solution of silver nitrate to form an adhesive scab. At the end of the first year iodides were given. After the healing of tertiary lesions under iodide of potassium (the most rapid remedy) iodipin injections along with mercurial inunctions were useful.

Colonel F. J. LAMBKIN, R.A.M.C., believed in mercurial inunctions, especially in cases with persistent induration at the site of infection, but in practice he found inunction to be difficult to carry out. His preference was for injections and he started usually with three-quarters of a grain of calomel once a week for four weeks and then continued with metallic mercury. He favoured local treatment of the upper air passages by means of chromic acid and even curetting. He had treated about 120 cases with arsenic and had found less soreness of the throat, but since his observations in Uganda he had given up atoxyl.

Sir FELIX SEMON considered that the oral administration of mercury was no preventive against severe tertiary manifestations, that local applications were needless, and that malignant cases should be treated with calomel injections and with sarsaparilla rather than with iodides.

Major H. C. FRENCH, R.A.M.C., commenced with inunctions and then injected grey oil. He interdicted smoking.

Mr. T. P. BEDDOES favoured administration by the mouth. He spoke well of injections and of Zittmann's decoction in which, he said, the mercury was in the form of an albuminate.

Mr. H. S. BARWELL used inunctions and injections of mercuric benzoate.

Dr. J. DONELAN used inunctions, then mercury and iodide of potassium, and then inunctions again.

Mr. W. STUART-LOW pleaded for selectiveness in the remedies for different cases and thought that Donovan's solution should be given more frequently.

Dr. STCLAIR THOMSON stated that Sir Jonathan Hutchinson only advocated the administration of mercury by the mouth on account of its convenience.

Dr. R. H. SCANES SPICER spoke in favour of calomel fumigation and insisted on the importance of patency of the nasal passages.

Dr. DAN MACKENZIE referred to the probability of "pills" passing undissolved through the alimentary canal and being therefore answerable for many cases of failure in treatment.

The PRESIDENT mentioned that the particulars of Bauer's simplification of Wassermann's serum test could be found in the *Deutsche Medizinische Wochenschrift*, 1908, No. 16.

In replying, Dr. LIEVEN explained the theory of the serum test. When the positive result was obtained it indicated that the patient had had syphilis at some time or other. It was less marked in those who had undergone energetic treatment.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Exhibition of Cases.—Infant Mortality.

A MEETING of this section was held on Jan. 22nd, Dr. J. PORTER PARKINSON being in the chair.

Dr. PARKINSON showed a case of Rheumatoid Arthritis in a female child, aged two and a half years, who began to suffer from swollen and painful joints in June, 1908; the ankles and wrists were first affected, then the knees, elbows, and other joints. There was much par-articular swelling with excess of fluid in the joints. The joints were at times acutely painful and the temperature rose occasionally to 103° or 104° F.; there was much wasting, and the child had a pallid earthy tint of skin, and appeared to be suffering from a slow toxæmia. There was general enlargement of the lymphatic glands, especially in the axillæ and groins. The spleen was much enlarged, extending four fingers' breadth below the costal margin. Over parts of the trunk and legs was a diffuse brown pigmentation resembling that seen in adults suffering from the same disease. The lungs and heart were normal. There was extreme wasting of the muscles of the legs and forearms. Intervals of apyrexia alternated with fever, often up to 103° or higher, lasting for a week or so, during which the joint pains and swelling, the lymphatic and splenic enlargements, and the cachexia were all much increased. There had been great improvement during the last six weeks both in the general and local symptoms.—Mr. W. MILNER BURGESS said he thought that the name "rheumatic" should be dropped in connexion with such cases, as it seemed to be the general opinion that there was no relation to rheumatism.—Dr. E. I. SPRIGGS said that occasionally on seeing a case for the first time there seemed to be some difficulty in diagnosis between subacute or chronic rheumatism and rheumatoid arthritis, though that difficulty generally vanished when the case was carefully gone into. Recently he showed before the Clinical Section of the society an adult male with rheumatoid arthritis who had enlarged glands in the groin, axilla, and above the elbow; he also had exophthalmic goitre. In the latter disease there was freqently pigmentation as well, as in chronic infective arthritis in adults. Exophthalmos had also been described in connexion with Still's disease, though he had never seen it. The spleen was probably enlarged in children because that organ responded more easily to infective conditions in them than in adults. He mentioned a case like that brought forward by Dr. Parkinson in which material had been obtained from the joint, but efforts to cultivate a micro-organism were fruitless.—Dr. F. PARKES WEBER asked whether von Pirquet's reaction for tubercle had been tried.—Dr. PARKINSON replied that he did not use the term "rheumatic" but "rheumatoid." Dr. Spriggs' case of rheumatoid arthritis in which glands were enlarged was interesting in showing the link between the cases in children and in adults. He did not think the case was tuberculous but would try the reaction.

Dr. T. R. C. WHIPHAM showed a specimen from a case of

Congenital Cystic Disease of the Kidneys and a skiagram taken during life. Both kidneys were from a male infant, aged 11 months, who was brought for whooping-cough and found to have an enlarged abdomen with bulging in both flanks and some dilated superficial veins. Two masses could be felt symmetrically situated and the anterior edges extended from the costal margin to the middle of Poupart's ligament. The tumours were slightly moveable and the percussion note over them was dull. The liver could be felt one and a quarter inches below the costal margin. The abdomen had been noticed to be large since birth. The specific gravity of the urine varied from 1005 to 1010. The urine contained a varying amount of albumin, from 0·1 to 0·8 per cent. The quantity of urea was from 0·4 to 1·8 per cent., the total being from 1·05 to 3·12 grammes per diem. The child, who was not greatly troubled by the cough, became rapidly worse. A transient œdema of the hands and feet occurred for a few days and towards the end the liver became enlarged and some purpuric spots appeared on the trunk. Death was ushered in by convulsions. The kidneys weighed 7½ ounces each. They were uniformly pale and tough and showed little difference between the cortex and medulla. They were crowded with innumerable cysts, the largest being of the size of a very small pea. The capsules were somewhat adherent. The pelves were dilated and contained a deposit of uric acid sand, but the ureters were normal and there was no obstruction to the flow of urine.—Dr. ROBERT HUTCHISON asked whether congenital cystic kidneys were ever unilateral, as he had made such a diagnosis in an adult case. He could recall two other cases in which the diagnosis was made during life. If a nodulated tumour could be felt in both loins and there was suspicious urine he thought that the diagnosis was justified.—Dr. E. CAUTLEY said he thought that the diagnosis could be justified if only one kidney was felt, as there were several cases on record in which one kidney showed signs and the other was found post mortem to be also cystic.—Dr. D. FORSYTH quoted a case in which two enormous cystic kidneys were found post mortem but only one had been felt.

Dr. A. J. JEX-BLAKE showed a case of Fibrosis of the Left Lung of considerable standing in a child, aged eight years. There was a history of pulmonary tuberculosis on both sides of the family. The patient had whooping-cough at the age of 12 months and "pneumonia" at four years; no other illnesses. At the age of five years he was admitted in April, 1906, to St. George's Hospital with fibrosis of the left upper lobe and bronchitis; while in hospital he showed irregular fever, 99°–101° F., every evening. In January, 1908, he was admitted to the Victoria Hospital with the complaint of cough and wasting; the signs of fibrosis at the left apex were more marked and there was slight clubbing of the finger tips. While in hospital he coughed little and no sputum could be collected; the temperature was irregular, rising occasionally to 99°–100°. On Jan. 12th last he was taken to the hospital again, with a history of cough and general illness for one week. The x ray examination showed general opacity of the upper part of the left lung; the heart was drawn over to the left; the diaphragm was low and moved poorly on both sides. The chief point of interest about this case was that on admission Grocco's paravertebral triangle of dulness was present on the right side behind.—Dr. PARKINSON asked the opinion of members on the value of Grocco's triangular dulness. He believed the sign to be present in this case, but some had said that it was present in every child whether healthy or diseased.—Dr. W. EWART said that in his hands the Grocco sign had been valuable as a sign of fluid, but it was, of course, necessary to exclude the presence of dulness from consolidation. The crucial test was to change the position of the patient and if the fluid was free the triangle of dulness should disappear, and should return on restoring the body to the former position. Empyemata, not being commonly free, did not answer to this test. When fluid filled the peritoneal cavity and raised the diaphragm, Grocco's sign could be found as a big equilateral triangle bisected by the spine.

Dr. FORSYTH read a paper on Infant Mortality as seen in a Children's Hospital. An exact pathological knowledge of the causes of infant deaths was of the greatest practical importance from the point of view of prevention. Hitherto our principal guide in this matter had been the official returns of the Registrar-General which showed the relative importance of various diseases in this connexion. These returns, however, were in some cases difficult to harmonise with the experience in the wards and post-mortem room of a children's hospital. Conditions which were known to be frequent causes of death in hospital practice occupied only a relatively insignificant place in the official returns, whilst others which were officially important were in practice unimportant. With the object of obtaining statistics based on accurate death certification Dr. Forsyth had examined the death records of the Evelina Hospital for Sick Children from Jan. 1st, 1885, to Dec. 31st, 1906, and had analysed the causes of 1202 consecutive infant deaths under one year. The numbers in this series were as follows:—

	Cases.		Cases.
Acute lung diseases	254	Mastoid disease	32
Diarrhœa	188	Meningitis (non-tuberculous)	26
Whooping-cough	135	Rickets	13
Tubercle	128	Convulsions	13
Marasmus	78	All other diseases	127
Congenital defects	75		
Syphilis	55		
Septic conditions	44	Total	1202
Intussusception	34		

The method adopted in tabulating these cases was explained and reasons were given to show that a comparison with the returns for England and Wales was permissible. For reasons specified the three items prematurity, measles, and whooping-cough were excluded from the comparison. Under the remaining headings the mortality in the official and in the Evelina Hospital returns stood thus in percentages:—

	Evelina Hospital.	England and Wales.
Acute lung diseases	23·8	21·4
Diarrhœa	17·6	23·2
Tubercle	12·0	5·1
Marasmus	7·3	16·3
Congenital defects	7·0	6·3
Syphilis	5·2	1·3
Septic conditions	4·1	—
Intussusception	3·2	—
Mastoid disease	3·0	—
Meningitis (non-tuberculous)	2·4	2·0
Rickets	1·2	0·58
Convulsions	1·2	12·2
Injury at birth	—	0·78
Starvation	—	0·7
Other causes	12·0	10·16
	100·0	100·0

While a fairly close correspondence existed between the two series many striking differences must be noticed. Acute lung trouble and congenital defects showed no great divergences. With diarrhœa the somewhat smaller figure that represented the Evelina Hospital mortality was accounted for by two facts. In the summer, when diarrhœa was rampant, the accommodation in children's hospitals was overtaxed and even moribund cases might be sent away. Secondly, it was probable that some of the deaths in the official returns which had been ascribed to diarrhœa would have been registered under other headings if facilities for post-mortem examinations were as great in general practice as in hospitals. With regard to marasmus, a difference of more than 100 per cent. existed between the two series of figures. Since the official returns represent over 15,000 dead infants, its interpretation possessed wide practical importance. Marasmus was a term of vague significance and was often employed in connexion with diseases of which it was merely a symptom, especially with syphilis, improper feeding, and tubercle. It could not be doubted that deaths from these causes were sometimes registered as due to marasmus and that a proportion of them should be distributed under other headings. These criticisms applied even more forcibly to deaths from "convulsions," the official returns for which were no less than 1000 per cent. of the Evelina figures and represented 11,000 deaths. The term "convulsions" in no circumstances represented more than a symptom and when employed as a cause of death merely hid under a meaningless designation important fatal conditions the returns for which were unduly minimised. With regard to syphilis, this disease was held responsible in 1905 for only 1200 infant deaths in the whole of England and Wales—little more than three a day. In the same year, however, 19,000 infants under two months were stated to have died from

prematurity. Probably this large figure included the deaths of numbers of syphilitic infants. As a matter of fact, the deaths in 1905 from syphilis of infants under three months amounted only to 300 according to the official returns. Other deaths from this cause must be looked for under the heading "marasmus." With regard to rickets the hospital figures were twice those for England and Wales. Here we must remember that cases of rickets were often fatal from broncho-pneumonia or diarrhœa and the primary condition was likely to be overlooked. After referring to acute mastoid disease as a cause of infant mortality Dr. Forsyth passed to the question of tubercle. The Evelina Hospital figures included only those cases in which tubercle was the actual cause of death and excluded all in which, though a tuberculous lesion was found post mortem, death resulted from some other cause. The difference in the two series was probably to be explained by the tendency of tuberculous disease in infants to simulate other non-tuberculous affections. Probably the hospital figure—12 per cent.—more nearly represented the real mortality than the official figure—5 per cent. The frequency, however, with which life was destroyed by tuberculous infections incurred during infancy was under-estimated even by this larger number because many such cases did not die until their second year and their deaths did not come into the infant mortality returns. The full importance of tubercle as a factor in infant life would be better revealed by statistics dealing with deaths up to 15 or even 18 months. At the Evelina Hospital 50 children died from tubercle between these ages. Many, if not most of them, must have been infected during their first year. In conclusion Dr. Forsyth expressed the hope that these Evelina Hospital statistics would lead to the preparation of corresponding figures from the records of other children's hospitals. An accurate knowledge of the causes of infant mortality could be best obtained from those institutions in which special opportunities existed for ascertaining the exact causes of infant deaths. If further the absolute numbers in each series were published they would be in a position to draw valuable conclusions based on many thousands of cases. At present 20 per cent. of the mortality, representing 25,000 deaths, were attributed to vague symptoms. When the community had set a proper value on infant life such terms as "convulsions" and "wasting" would no longer be accepted for death registration. If no more satisfactory explanation of the cause of death was forthcoming, further steps would be insisted on, as was done to-day with adult deaths. By this means a far-reaching and practical measure would be taken to diminish the present excessive waste of infant life.—A discussion followed.

MEDICAL SOCIETY OF LONDON.

Functional Disorders of the Stomach.

A MEETING of this society was held on Feb. 1st, Mr. C. B. LOCKWOOD, the President, being in the chair.

Dr. SIDNEY H. C. MARTIN delivered the first of the 1909 Lettsomian lectures. His subject was Functional Disorders of the Stomach. He said that it was necessary before discussing the changes in the functions of the stomach in disease to attempt a classification of the conditions met with. That was somewhat difficult and the classification which he had found most useful in the clinical consideration of the cases was the following:—1. Functional disease of the stomach divided into three groups: (*a*) gastric irritation, in which the symptoms were induced mainly through irritation of the organ from various causes; (*b*) gastric deficiency, which might result from irritation of the organ and in which the main condition was that of deficiency of the function of the stomach; and (*c*) indigestion of nervous origin in which symptoms referable to the stomach were associated with a large number of symptoms referable to the nervous system. 2. Inflammation of the stomach which might occur in various diseases or as a result of an irritant poisoning, for which the term "gastritis" ought to be reserved. Such cases as those he did not propose to consider. 3. Organic disease, ulcer and carcinoma of the stomach. In regard to the classification of functional disease which he had given it was warranted as a result of investigation of the alterations of the functions of the stomach in such cases. Before, however, dealing with the signs and symptoms of functional disease it was worth while to take a general review of the secretory activity and motor power of the organ in all forms of disease. The digestive activity of the stomach contents (that was the amount of pepsin secreted) increased or diminished with the amount of hydrochloric acid secreted by the mucous membrane. In the ordinary forms of gastric irritation which were commonly described as acid dyspepsia there was hyperchlorhydria. The percentage amount of hydrochloric acid secreted two hours after a meal was between 0·25 and 0·4 gramme. That was a fact which he could verify not only from his own observations but from those which had been made on a large scale in other countries. If, however, they took the functional cases such as were admitted into the wards of a hospital where there were severe symptoms and usually grave defects of nutrition one found that the condition was more frequently one of hypochlorhydria than of increased secretion of acid. All the cases recorded were diagnosed as functional, partly from the duration of the illness and partly from the symptoms of the patient, and mainly from the fact that recovery occurred more or less completely as a result of treatment. There were 25 cases recorded and in one case there was no secretion of acid in two hours' digestion; in four cases the total acid secreted was under 0·1 per cent., in seven cases the secretion was from 0·11 to 0·14, and in the remaining 14 cases the secretion was either normal or (in four) was increased. A large proportion of the cases showed a great deficiency of secretory activity on the part of the stomach. Of the seven cases of neurosis, one showed achlorhydria, two a percentage of 0·12, one of 0·2, one of 0·24, and two of 0·29 hydrochloric acid. All those cases were cases of indigestion of food with great predominance of nervous symptoms, and the gastric analysis showed the great variation which occurred in the secretion of acid in such cases. 16 of the other cases were definite instances of damage to the stomach done by irritation of various kinds. In two cases there was marked increase in the amount of acid secreted. In seven the percentage of acid was between 0·18 and 0·23. In three the percentage was about 0·12, and in four the percentage varied between 0·02 and 0·08. They might, therefore, divide those cases as regards the secretion into seven of hypochlorhydria, seven of normal secretion, and two of hyperchlorhydria. In the case of achlorhydria after three weeks' treatment a fair percentage of acid was found in the stomach contents, and in Cases 6 and 11 a similar result was obtained. In another case, however, the percentage of acid was actually less after a month's treatment, although this patient eventually was to all intents and purposes restored to health. The two cases remaining were those of gastroptosis, both occurring in women. One showed a diminished percentage of acid, 0·12; the other showed a slight increase in the amount of acid, 0·23. At the time cases came under treatment there was great variability in the secretion of acid in the stomach, so that it was impossible solely from the symptoms to determine whether the case was one of increased acid secretion, diminished acid secretion, or absence of acid secretion. The digestive power was fairly proportional to the amount of acid secreted, but even when some acid was secreted no pepsin might be present in the stomach contents. Organic acid was absent in nearly all those cases that showed an acidity of over 0·2 per cent.; below that percentage of acid organic acids were found, chiefly lactic acid, in small quantities, although in one case it was 0·14 per cent. Two of those cases were of the nervous type; in one the secretion of acid was 0·21 per cent., and the other, a case of neurotic vomiting in a young girl, was 0·29 per cent. Dr. Martin then gave details of 18 cases of ulcer of the stomach; of these five showed a deficiency of 0·1 per cent. and under; the remaining 13 cases were either slightly below normal or more than the normal—that was to say, they showed hyperchlorhydria. He drew attention to one case in which three years after gastro-enterostomy the secretion of acid was 0·14 per cent., and the digestive power was 54 per cent., both below the normal. He should have to speak later of the condition of the stomach after gastro-enterostomy and ulcer, and would have to draw attention to the fact that not only might there be deficiency in secretion but also from time to time an increase of secretion. In another series of 18 cases of carcinoma in 12 the secretion of acid was below 0·1 per cent., and in six varied between 0·0 and 0·05 per cent. In three cases

the amount of acid was between 0·14 and 0·17, and in three above 0·2 per cent. In two of the cases there was hyperchlorhydria, in one case, 10 days before death, 0·38 per cent., and in the other, 68 days before death, 0·37 per cent. All the cases had palpable growth, some underwent gastro-enterostomy, and some died in hospital. On the whole, the cases of carcinoma contrasted strongly with cases of ulcer and cases of functional disease inasmuch as the greater proportion of cases showed a great diminution of acid secreted as well as a great diminution of digestive power. Dr. Martin concluded that that review of secretory activity in disease showed that the results of analysis of the stomach contents could not be relied upon as an absolute diagnostic sign. It was, however, a help in diagnosis combined with other facts.

OPHTHALMOLOGICAL SOCIETY.

Four Generations of Lamellar Cataracts.—Unusually Rapid Development of Cataracts.—Note on the Colours of Benham's Top.—Note on Some Rhythmic Oscillations of the Pupil.—Retinal Exudation with Extreme Distension of Vessels.—Exhibition of Cases.

A MEETING of this society was held on Jan. 28th, Mr. R. MARCUS GUNN, the President, being in the chair.

Mr. N. BISHOP HARMAN read a paper on Four Generations of Lamellar Cataracts. He showed the pedigree of a family for five generations, four of which presented a marked inheritance of congenital cataract. 17 childships were traced, comprising 63 persons. Eight died in infancy. Of the remaining 55 it was known that 19 had congenital cataract. In no case had there been any in-breeding or marriage with a person similarly affected. The type of cataract consisted for the most part of central opacities, varying in size; some were minute, Y or X or star-shaped; others showed definite lamellar formation. In some cases the cataracts were of long standing and no evidence could be found that they progressed beyond the stage at which they were first seen. Probably the number of cases of cataract found did not represent the true total, for in one childship of seven members amongst whom only one case of cataract was admitted examination of the seven showed that four had lenticular opacities. The inheritance was strictly from those who had cataract; in no case was cataract found in a child where the parents were free from the defect. When a defect had disappeared from a branch of the family it did not tend to reappear. The teeth usually were good and no other developmental errors were found.

Mr. HARMAN also read notes of a case of Unusually Rapid Development of Cataracts in a boy, aged nine years. A year previously his vision had been recorded at school as $\frac{6}{18}$; an examination passed three months before showed that he could then write well. When seen he was quite blind; both lenses were completely cataractous; the lens matter was soft and opaque. The lenses were removed by curette evacuation at the Belgrave Hospital and at the end of six weeks the boy left the hospital able to read $\frac{6}{6}$ with cataract glasses, and later he showed no trace of general disease, but there was some evidence of defect in his ciliary vessels.

Mr. A. S. PERCIVAL (Newcastle-on-Tyne) read a paper entitled "Note on the Colours of Benham's Top," and he demonstrated the different colours shown when the top was rotated clockwise, as compared with those when the rotation was in the opposite direction. The explanation, which was not yet certain, was highly technical and he suggested several theories.

Mr. PERCIVAL also read a contribution entitled, "Note on Some Rhythmic Oscillations of the Pupil." He said that all were familiar with the rhythmic contraction and dilatation seen in certain diseases and which were usually looked upon as of grave significance. He compared this with the oscillatory discharge from a Leyden jar, which occurred under certain conditions. If it were discharged through a conductor of high resistance the charge simply died away. If it were discharged through a good conductor, such as a coil of wire, the discharge consisted of a number of excessively rapid oscillations or surgings. He then compared the nerve cell and axis-cylinder with the Leyden jar and conducting wire, stating that owing to disease the discharge of nerve impulse was made in an irregular manner. He regarded the movement tremors of disseminated sclerosis as an almost exact parallel to the oscillatory discharge of a Leyden jar.

Dr. DAVID J. WOOD sent a communication on a case of Retinal Exudation with Extreme Distension of Vessels, and perhaps Arterio-venous Anastomosis. Dr. Wood reminded members that he contributed a similar case to the twelfth volume and another to the twenty-fifth, and recently he had seen and examined a third instance of that rare condition. He saw the patient first in 1902 and ordered glasses for her; there was then no complaint of the sight being bad. Later, as she had an attack of dim vision, he examined her fundi and found large blood-vessels running up to a patch on the upper part of the fundus, which possibly might have resulted from a former hæmorrhage. The patient, who was then 50 years of age, returned in 1907, reporting that a few days previously the right eye had suddenly failed. He found that to be due to a diffuse opacity in the vitreous; no fundus details could be made out. Then the vitreous began to clear and he presented a picture of the appearance. There was a white area above and enormously dilated blood-vessels could be seen running up to it from the disc. The colour of the vessels was intermediate between that of arteries and veins. The vessels were very tortuous. From the left trunk a vessel sprang which was arterial in colour, while another vessel, obviously venous, sprang from the opposite main trunk. There were fine choroido-retinal changes which covered the inner part of the fundus. He believed the growth was probably sarcomatous and his colleague advised excision, but Dr. Wood was so impressed with the likeness to his other cases that he held his hand. He hoped to report further on the case. He had not been able to hear more of his second case, already mentioned.—Mr. E. TREACHER COLLINS described a similar case and remarked on the rarity of the condition, and Mr. G. COATS described the pathological findings in a case which he had thoroughly examined.

The following cases were shown:—

Mr. A. W. ORMOND: A case of Tubercle of the Choroid.

Mr. R. W. DOYNE: A case showing Peculiar Opacities in the Cornea.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

A Year's Mental Hospital Work.—Intracranial Tumour.—Poliomyelitis of Conus Medullaris.

A MEETING of this section was held on Jan. 15th, Dr. W. G. SMITH, the President, being in the chair.

Dr. W. R. DAWSON read a short report of the more interesting points which had arisen in the practice of Farnham House Mental Hospital during the year ending March 31st, 1908. Of the admissions the essential cause in 29·4 per cent. was diathesis, in 47 per cent. various forms of moral and physical wear and tear, and in 23·5 per cent. toxic influences. There was, however, a neuropathic heredity in 71·4 per cent. The forms of disease in the cases due chiefly to diathesis were mania, melancholia, and dementia, with two cases of alcoholism. In one of the cases belonging to the second class the cause appeared to have been relief of anxiety. Of the toxic cases one of alcoholic paranoia was quoted as showing that some alcoholic cases exhibit no symptoms pathognomonic of their origin. A case of true diabetic melancholia was also detailed, which recovered mentally when the sugar disappeared. Amongst the admissions melancholia had been the prevailing form of disease. As regards physical signs, albuminuria had been found in 12 cases, mostly of a depressed cast; glycosuria in eight. Arterial pressure was tested in seven admissions, being found normal in two and high in five. A case was detailed which seemed to show that large doses of bromide might possibly lowe resistance to micro-organisms. Thyroid treatment was tried in seven cases with good results in three. Two, however, were not improved, and the state of the heart induced by the drug had given some anxiety for a time. Atropine treatment had been used in two cases of alcoholism with some immediate success; and unsuccessfully in a case of morphinism. Suprarenal extract had been found useful in keeping excitement in check. Some advantage had been found in the use of formates and lecithin.—The PRESIDENT said that to the ordinary practitioner the subject of etiology, on which Dr. Dawson had dwelt at the commencement of his paper, was perhaps the most important

chapter in neurological work. If their minds were clear as to the circumstances that predisposed to insanity, the practitioner might sometimes be in a better position to forewarn patients and be forearmed himself as to what to do. The discussion in that section last year had shown that the influence of alcoholism *per se* in the production of insanity had been overrated. He was anxious to know if there were any definite mental variations correlated in any way with the forms of alcoholism. It was said that the police of France found absinthe drunkards to be homicidal and had to separate them from the others, and it was possible that the essential oils in absinthe were important in producing pathological results. He would also like to know if there was any particular type of mind or mental development that was specially predisposed to alcoholic disturbance.—Dr. T. P. C. KIRKPATRICK thought that in two of the three groups of causation—diathesis and mental stress and strain—it was difficult to appreciate Dr. Dawson's exact meaning. He had some difficulty in understanding what Dr. Dawson meant by regarding diathesis apart from heredity in some of his figures. Did he recognise a type of individual who was likely to go mad apart from any hereditary taint? He (Dr. Kirkpatrick) thought that there was a difficulty in accepting mental stress and strain as a general cause of insanity, although it might be a predisposing cause in conjunction with some weakness, hereditary or acquired. It had been proved that eye-strain, either from want of muscle balance or errors of refraction, was capable of producing very serious nervous troubles, and many long-standing nervous diseases had been cured by correction of such errors, which might be a cause of trouble in the brain and, under subsequent strain, might produce insanity.—Dr. DAWSON replied.

Dr. H. C. DRURY read the history of a case of Intracranial Tumour in a female, aged 30 years. The symptoms had lasted for six months before the patient came under observation. When seen the cardinal symptoms of brain tumour were present, but there was nothing to indicate its position. As she was getting rapidly worse, unconsciousness impending, and the sight having almost gone, it was decided to ask Dr. C. A. K. Ball to perform an operation for the relief of pressure. This was carried out on July 13th. A large trephine opening was made in the temporal region on the right side under the muscle; the dura mater was opened and a small quantity of fluid escaped; the wound was then closed. Improvement followed rapidly; at intervals vomiting and headache returned and the brain was tapped, fluid being drawn off on each occasion. These intervals became shorter till eventually tapping had to be done daily. A tube was then inserted and was kept in for several weeks. During all this time very large quantities of fluid escaped. The patient improved so much that she could walk about and could see and recognise people and had neither headache nor vomiting. The wound was kept aseptic during the whole time. She suddenly became unconscious one morning and she died on the next morning (Nov. 8th), nearly five months after operation. The case was brought forward to illustrate the merciful relief afforded by an operation of this kind, where there were no symptoms to indicate the position of the lesion, and therefore where no operation with any hope of cure could be attempted. It was found that the lesion was a large cyst in the cerebellar and pontine regions, which could not have been dealt with even had it been localised.

Dr. J. E. O'CARROLL read an account of a case of Poliomyelitis of the Conus Medullaris. A girl, aged 17 years, had been sent up from the country suffering from "tumour of the bowel." This turned out to be a very big prolapse of the rectum. Some months previously she had had a febrile attack, following which she had suffered from incontinence of urine and fæces. Later the bowel prolapsed. The sphincter ani was entirely relaxed and the opening of the urethra was rather wide. Sensation was perfect. The patient's general health was good. Under treatment, principally by the faradic current, complete control was recovered in the rectum, but the patient was unable to retain urine for more than two hours when she left hospital.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 19th, Dr. T. J. Wood being in the chair.—Dr. F. W. Eurich read the following paper on a Case of Acute Ataxia. Among the rarer diseases of the nervous system there was a group characterised by the rapid onset of incoördination often associated with disordered articulation. The reflexes were generally normal, so also were the various forms of sensation, excepting muscular sense, and as a rule there was no nystagmus or any other ocular symptoms. To this group the name "acute ataxia" had been given. The clinical features were therefore clear and distinctive; not so the pathology, for post-mortem examinations had been very few. Most of the cases arose in the course of some infectious disease, such as typhoid fever or small-pox; a few had followed upon injuries. Minute areas of inflammation or of hæmorrhage had been assumed and in some cases found. As quite a number of these cases appeared to recover it must be assumed that these foci of disease must be disproportionately small to the violence of the symptoms. The chief difficulty arose when these patients claimed compensation, and an insurance company asked for an expression of opinion as to the nature and the prospects of such a case and as to its alleged relation to the injury received.—Mr. F. W. Goyder read notes of a case of Pulmonary Tuberculosis occurring in an infant. The child, a male, suffering from complete hare-lip and cleft palate, was otherwise apparently healthy at birth. His mother was the subject of active pulmonary tuberculosis and her mother and her husband's sister had died from the same disease. When two months old the child was admitted into the Bradford Royal Infirmary, but no operation was performed until the patient reached the age of 5½ months. The reason for this delay was occasional unexplained rises of temperature, occasional slight attacks of diarrhœa, of otorrhœa on one occasion, and a slight cough. The palate was closed by Mr. Arbuthnot Lane's method with complete success and for a month all went well and the child gained weight. Then followed three attacks of what appeared to be broncho-pneumonia of the right apex. The cough then diminished and feeding difficulties began, a reasonable amount of food giving rise to diarrhœa but seldom vomiting. Very gradual but progressive wasting set in and the child died when ten months old without meningeal or general symptoms of tubercle. The post-mortem examination showed many whitish patches of consolidation, broncho-pneumonic in arrangement, at the right apex. Throughout the lungs there were miliary tubercles sparsely scattered, a few in the liver, and none elsewhere. The bifurcation gland of the bronchi was enlarged but not caseous. The tonsils and other glands, including the mesenteric, were normal. The lesion in the lung was by far the most advanced. Other viscera were normal. Microscopically the lung showed tuberculous broncho-pneumonia with tubercle bacilli demonstrable and giant cells. Surrounding the tuberculous patches were to be found inflammatory changes with newly formed fibrous tissue. Schlossmann stated that the youngest child whose organs showed processes which might be characterised as defensive in nature was one of 15 months old. In this case a zone of inflammation with the formation of new vessels surrounded the tuberculous area. Mr. Goyder claimed his as an even younger case classifiable under the name of chronic phthisis.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 22nd, Dr. W. H. Cheetham being in the chair.—Dr. W. H. Maxwell Telling read a paper on the Clinical Relationship of Erythema Nodosum, adducing evidence to show that this disease was not one of the manifestations of the rheumatic infection. He also contended that it was not a variant of the erythema exudativum multiforme of Hebra but that it was a specific disease allied to the acute eruptive fevers.—Mr. H. Collinson read a paper on the Operative Treatment of Prostatic Hypertrophy, reviewing the pathological conditions usually present and drawing a comparison between the perineal and suprapubic methods of removal of the prostate; the operative risks and the points to be observed in after-treatment were dealt with in some detail.—Dr. Myer Coplans showed organisms of Vincent's Angina obtained in each of four outbreaks within the past three months in Leeds and the East Riding. The organisms were spirilla and fusiform bacilli obtained from cultures of throat swabs on alkaline-glucose-serum slants (1 per cent. glucose).—Mr. B. G. A. Moynihan showed an appendix removed within three hours of the onset of an acute attack of severe pain associated with an extremely rigid abdominal wall. The symptoms suggested a perforation of the appendix, but the condition found was one of thrombosis of the

vessels in the distal part. The distal part of the appendix, the territory of the thrombosed vessels, was of a deep purple colour, the remainder being pale. This condition, it was suggested, was the early stage, of which gangrene and perforation were the later stages. A specimen of Partial Gastrectomy showing malignant changes in a chronic ulcer, the symptoms of which had been present for 15 years, was also demonstrated.—Dr. E. F. Trevelyan showed: 1. A boy, aged 14 years, with Disseminated Sclerosis which the parents attributed to an injury sustained seven months ago. The gait was slightly reeling. The speech was drawling. There was aimless laughing with nystagmus. Convergence was deficient. The intentional tremor was present. The knee-jerks were exaggerated with left foot clonus. There had been several epileptiform seizures. 2. A woman, aged 24 years, with Epilepsy. In at least two fits there had been a precursive motor aura, the patient being impelled to run forward before unconsciousness supervened.—Mr. J. F. Dobson showed a Heart with a Stab Wound from a butcher's knife penetrating the Left Ventricle. The wound was sutured with two catgut stitches with great immediate improvement; however, death resulted from sepsis 60 hours after operation.—Dr. J. Stewart showed a specimen of Tubal Gestation removed from a patient, aged 24 years, who was suckling her second child, aged five months.—Mr. Michael A. Teale showed a child with an Opacity of the greater part of the Capsule of the Lens of each Eye, probably due to a persistent remnant of the embryonic capsule of the lens.—Dr. Telling showed a girl with Pigmentary Syphilide of the Neck as an early secondary lesion.—Cases and specimens were also shown by Dr. C. Oldfield, Mr. R. Lawford Knaggs, Dr. R. A. Veale, Dr. T. Wardrop Griffith, and Mr. G. Constable Hayes.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Jan. 28th, Mr. T. H. Bickerton, the President, being in the chair.—Mr. W. Thelwall Thomas read notes on two cases of Actinomycosis of the cervico-facial type. The first occurred in a housemaid who had nothing to do with cattle; the disease was very severe and involved the facial bones. The second was that of a young man who looked after a horse and admitted to the frequent chewing of corn. Both cases commenced as gum-boils. The treatment consisted in free incisions, packing the wounds with gauze soaked in tincture of iodine, and the internal administration of iodide of potassium and iodipin. Both cases recovered after an illness lasting many weeks.—Mr. K. W. Monsarrat referred to a case under his care in which the infection was pharyngeal in origin and closely resembled tubercle. In spite of energetic treatment, including a vaccine, the patient died from extension to the vertebræ.—Mr. D. Douglas-Crawford mentioned two cases which he had reported two years ago, one of the cervico-facial type, and the other which had attacked the abdominal wall; both cases were treated by excision, local applications of iodipin, and iodide of potassium internally. Both ultimately recovered.—Dr. F. W. Baker Young described a case of Muscarine Poisoning. The symptoms were those of catarrhal jaundice followed by peripheral neuritis and paroxysmal dyspnœa. Atropine was the drug chiefly employed, but the case ended fatally.—Mr. T. C. Litler Jones reported two cases of Diaphragmatic Hernia. One followed a perforating wound of the left wall of the chest; a portion of the eighth rib was excised, the diaphragm was repaired, and the patient ultimately made an excellent recovery. The second case was that of a child who presented symptoms of intestinal obstruction. The hernia was reduced through an abdominal incision, but the patient died some days later from severe hæmatemesis.—Dr. C. Rundle and Dr. R. Stenhouse Williams contributed a note on the Serum Treatment of Diphtheria with Special Reference to Anaphylaxis.

ROYAL SOCIETY OF ARTS: SWINEY PRIZE.—Dr. Swiney, who died in 1844, bequeathed the sum of £5000 in Consols to the Society of Arts for the purpose of presenting a prize on every fifth anniversary of his death to the author of the best published work on jurisprudence. The prize is a cup of the value of £100 and money to the same amount, and the award is made jointly by the Royal Society of Arts and the Royal College of Physicians. The cup now given is made by Messrs. R. and S. Garrard and Co., after a design specially prepared for the first award by D. Maclise, R.A.

Reviews and Notices of Books.

The Diseases of Children. A Work for the Practising Physician. Edited by Dr. M. PFAUNDLER, Professor of Children's Diseases and Director of the Children's Clinic at the University of Munich; and Dr. A. SCHLOSSMANN, Professor of Children's Diseases and Director of the Children's Clinic at the Medical Academy in Düsseldorf. English Translation edited by HENRY L. K. SHAW, M.D. Albany, N.Y., Clinical Professor Diseases of Children, Albany Medical College; Physician in Charge, St. Margaret's House for Infants, Albany; and LINNÆUS LA FÉTRA, M.D. New York, Instructor of Diseases of Children, Columbia University; Chief of Department of Diseases of Children, Vanderbilt Clinic; Assistant Attending Physician to the Babies' Hospital. With an Introduction by L. EMMETT HOLT, M.D. New York, Professor of Pediatrics, Columbia University. In four volumes. Illustrated in black and white and in colours by 61 full-page plates and 430 text cuts. London and Philadelphia: J. B. Lippincott Company. 1908. Vol. I., pp. 440; Vol. II., pp. 619; Vol. III., pp. 552; and Vol. IV., pp. 543. Price £4 4*s.* net.

IN most civilised countries within the last 20 or 30 years an increased attention has been paid to the phenomena incidental to life in infancy and childhood, both in health and disease. The part played by medical practitioners in promoting the study of children and in diffusing instruction to the public generally has been by no means inconsiderable, though even at the present time it may be questioned whether the subject of pædiatrics has achieved sufficient recognition in the ordinary medical curriculum, in view of the fact that the general practitioner has an important duty to perform in supervising the feeding and rearing of children, as well as in regard to the treatment of their diseases. In spite of the importance of the subject of pædiatrics and of the numerous special papers and periodicals devoted to it, it comes almost as a shock to find a work on diseases of children extending to four large quarto volumes. Those, however, who may have had occasion to refer to the well-known work edited by Professor Pfaundler and Professor Schlossmann in the original German will welcome this English edition, the more so that the work of translation has been carefully and efficiently carried out, while the printing, binding, and general production are an improvement on the original.

This truly enormous and exhaustive work on diseases of children is the outcome of the labours of 47 collaborators, chosen for their special experience of the subjects intrusted to them from the professors in many of the large towns of Germany, Austria, Hungary, and Switzerland, and it therefore represents in the widest and most catholic manner the experience of the Teutonic school of medicine. The first volume is devoted chiefly to a general consideration of the symptomatology, prophylaxis, and treatment of disease in childhood and infancy and to a study of the problems of nutrition and metabolism. Dr. Franz Hamburger of Vienna deals with the general pathogenesis and pathology of childhood and discusses the special dispositions of children towards disease and the nature of the response to infection. He quotes with approval the views of von Pirquet and Schick that the symptoms of an infective disease commence when the organism has formed antibodies to resist the invading cause. Professor Pfaundler contributes a lengthy analysis of the symptomatology of children's diseases. He points out that there are two ways of presenting the relation between diseases and their symptoms: first, by an enumeration of the symptoms peculiar to each disease; and secondly, by a process of deduction from a general study of the symptoms of the condition causing them. The former is that usually adopted in

text-books, while the latter, which Professor Pfaundler calls the semiotic method, he has found of special value in clinical teaching. He therefore considers separately the individual symptoms and the syndromes or groups of symptoms met with in diseases of children; he discusses their nature, the conditions under which they occur, and their significance. This section has a separate index at the end of it to facilitate reference to any special symptom. Professor Pfaundler confesses to some trepidation as to the verdict of those of his own specialty regarding the value of his grouping and consideration of symptoms, but as he is careful to indicate that it is intended for reference purposes only, and since he deprecates most strongly the exaggeration of the value of single symptoms, there is little to criticise in it except the claim that the method is original or unusual since it is that adopted in many text-books on clinical diagnosis.

Dr. B. Bendix of Berlin contributes a sound article on General Prophylaxis in Diseases of Children. Questions of clothing, general hygiene, and the general management of children at the various periods of their life represented by infancy, early childhood, and the school age are discussed in a useful and helpful manner. In particular the importance of due precautions in regard to school hygiene in the broadest sense is pointed out. In this connexion some interesting illustrations are given of the "School in the Woods" for sickly children at Charlottenburg. An article on General Therapeutics in Diseases of Children by Dr. H. Neumann of Berlin contains a description of the various general methods which may be employed, including physical forms of treatment by baths, exercises, and hydrotherapy, as well as by the use of drugs. Various special procedures are described, such as lavage, gavage, and the administration of enemata. Considerable attention is also devoted to climato-therapy and its indications. An interesting statistical study of mortality and morbidity in infancy, with especial reference to age, legitimacy, and social and hygienic conditions, is contributed by Professor W. Prausnitz of Gratz. The subject of milk is dealt with by Professor R. M. Raudnitz of Prague, and that of the female breast by Dr. S. Engel of Dresden. Dr. W. Camerer of Stuttgart discusses metabolism and nutrition during the first year of life and the growth of children in weight and height. He brings forward a wealth of physiological information in regard to these matters. Nutrition after the first year is dealt with in a similar manner by Dr. P. Sommerfeld of Berlin, who also contributes a note on the urine and fæces in the first year.

The second volume is devoted to diseases of the newly born and of puberty and to general and infectious diseases. Diseases of the newly born are described in an interesting article by Dr. W. Knöpfelmacher of Vienna. Among other conditions which are considered we may mention as worthy of special note those of the obstetrical paralyses and other birth lesions, the so-called pregnancy reactions in the newly born, and tetanus and icterus neonatorum. Dr. O. Rommel of Munich describes the conditions of prematurity, congenital debility, asphyxia, atelectasis, scleroderma, and sclerema. A short section on Diseases of Puberty by Professor C. Leitz of Munich affords an instructive analysis of the various disorders, functional and otherwise, associated with that period of life. Dr. A. Japha of Berlin describes the diseases of the blood and blood-forming organs. The account given of anæmia pseudoleukæmia infantum and the other anæmias of childhood is critical and interesting. The hæmorrhagic affections of childhood, including hæmophilia and the various purpuric diseases, are fully discussed by Dr. R. Hecker of Munich, and some interesting photographic reproductions are given in illustration. The subject of infantile scurvy is fully dealt with by Professor W. von Starck of Kiel. His account of the condition includes a critical discussion of its etiology and pathogenesis and is illustrated by an excellent coloured plate showing the subperiosteal hæmorrhages. In the description of rickets by Professor W. Stoelzner of Halle the diagnosis is considered at some length and for treatment cod-liver oil with phosphorus in doses of one-sixth grain is recommended as the best, especially in cases with spasm of the glottis.

To the second volume, also, brief accounts of diabetes mellitus and insipidus are contributed by Professor C. von Noorden of Vienna. A learned discussion of scrofula by Dr. B. Salge of Dresden leaves us still without a clear conception of what this term is now intended to refer to, or why it should be retained, since it is admitted that its manifestations are tuberculous. Measles is described by Dr. P. Moser of Vienna; Scarlet Fever, by Dr. C. von Pirquet and Dr. B. Schick, also of Vienna; Rubeola and the "Fourth Disease," by Professor J. von Bókay of Budapest; Varicella, by Dr. N. Swoboda of Vienna; Vaccinia, by Dr. L. Voigt of Hamburg; Diphtheria, by Dr. J. Trumpp of Munich; Mumps, by Dr. E. Moro of Gratz; Enteric Fever, by Professor R. Fischl of Prague; Dysentery, by Dr. J. Langer of Prague; Influenza, by Dr. J. H. Speigelberg of Munich; and Whooping-cough, by Dr. R. Neurath of Vienna. These accounts are clear, well arranged, and are illustrated where necessary by coloured plates of the various rashes and throat conditions which are really admirable. In the treatment of scarlet fever Dr. Schick writes highly of the value of Moser's serum. An interesting account is given of the results of bacteriological investigation in some of these diseases, that on whooping-cough may be specially mentioned. In regard to diphtheria the "serum disease" is carefully described and the use of concentrated serum is recommended in order to avoid it or to lessen its severity if it occurs. Dr. J. Ibrahim of Heidelberg gives a description of acute articular rheumatism and includes also accounts of the other forms of polyarthritis occurring in childhood as well as some of the chronic joint lesions. The article on syphilis, written by Dr. C. Hochsinger of Vienna, is one of the best in the whole book and forms an exhaustive study of the various manifestations of the disease in the fœtus, in infancy, and in later childhood. It is clearly and well written, admirably arranged, and is illustrated by excellent plates, both plain and coloured. The article on tuberculosis by Professor Schlossmann is also worthy of special commendation as a judicial and thorough account of the general problems of infection, etiology, and morbid anatomy, as well as of the clinical manifestations of that disease.

The third volume deals with diseases of the digestive, respiratory, and circulatory systems and those of the thyroid gland. Dr. Moro gives a clear and well-arranged account of diseases of the mouth and Dr. Finkelstein of Berlin describes the conditions of the tonsils, pharynx, and œsophagus. Professor Fischl contributes articles on the diseases of nutrition in infancy, on local diseases of the stomach and intestine, and on gastro-intestinal diseases of older children. An excellent account of Hirschsprung's disease, or congenital dilatation of the colon, is included in the second of these. The article on Pyloric Stenosis in Infancy by Professor Pfaundler is an interesting study of that condition and includes a summary of the various theories which have been propounded to explain it, given in tabular form. Diseases of the vermiform appendix and the forms of hernia occurring in children are described by Dr. P. Selter of Solingen and animal parasites and their effects by Dr. Langer. A scientific and useful study of diseases of the peritoneum is afforded in the article by Professor M. Stooss of Berne who also writes the section dealing with diseases of the liver. Dr. W. Freund of Breslau contributes an article on the pathology of metabolism, Dr. Moro one on intestinal bacteria, and Professor Schlossmann

one on poisons. Diseases of the nose, trachea, bronchi, lungs, and pleura are described by Dr. E. Feer of Basle in an admirable article which is thoroughly practical and abounds in useful suggestions as to treatment. Dr. Demetrio Galatti of Vienna contributes an article on diseases of the larynx, and Dr. J. K. Friedjung of Vienna gives an interesting and critical *résumé* of the debatable subject of diseases of the thymus. The diseases of the circulatory system are dealt with by Dr. C. Hochsinger of Vienna in a long and interesting article. The various forms of congenital heart disease are described in some detail. In the treatment of cardiac weakness in children some of the newer preparations of digitalis, such as Golaz's dialysed digitalis and Cloetta's digalen, are highly recommended. Professor F. Siegert of Cologne treats of diseases of the thyroid gland and differentiates cretinism, myxœdema, myxidiocy, and infantilism, but the accounts given are not as clear as could be desired, indeed, they are somewhat confusing.

The fourth volume treats of diseases of the genito-urinary system, the nervous system, and the skin. Dr. L. Langstein of Berlin gives a thoroughly practical and well-written account of the anomalies and diseases of the genito-urinary system. His study of the conditions under which albuminuria occurs apart from nephritis is admirable, and the account given of orthotic or cyclical albuminuria is one of the most valuable and suggestive contributions to the whole work. The descriptions given of nephritis and of "colicystitis" are also worthy of special commendation. Professor H. Pfister of Freiburg contributes a short article on the Special Anatomy of the Child's Brain. Organic diseases of the nervous system are described in a clear and well-arranged article by Dr. J. Zappert of Vienna, which is illustrated by useful reproductions of photographs. Dr. M. Thiemich of Breslau describes the functional diseases of the nervous system. He discusses at some length the "spasmophile diathesis" which is regarded as the constitutional soil upon which tetany, laryngospasm, and eclampsia develop, and gives interesting and useful accounts of these conditions. The article as a whole is a valuable account of the various functional disorders of the nervous system in childhood. Dr. Thiemich also contributes the article on diseases of the meninges. Detailed descriptions of the various forms of meningitis are given, including the form which is called by German writers "serous meningitis." Dr. E. Galewsky of Dresden gives an instructive and well-illustrated account of diseases of the skin, and Dr. C. Leiner of Vienna contributes a special article on tuberculous disease of the skin.

As a standard work of reference on diseases of children and their management this work should occupy a very high place. In common with most text-books written by many authors in collaboration, the style and even the quality of the various articles vary considerably, and of necessity there is a certain amount of overlapping and of repetition, but, as the editors claim in the preface, this is not necessarily a disadvantage. The quality of the illustrations, and more especially of the coloured plates, is unusually good, and they add considerably to the interest and usefulness of the work. Morbid anatomy is not considered exhaustively but only so far as is necessary for the proper explanation of the conditions described, but diagnosis and treatment are dealt with in detail. We can cordially commend this text-book to our readers.

Essays, Biographical and Chemical. By Sir WILLIAM RAMSAY, K.C.B., F.R.S. London: Archibald Constable and Co., Limited. 1908. Pp. 247. Price 7*s.* 6*d.*

WE have read this interesting collection of essays on chemical history and biography with the greatest pleasure. Sir William Ramsay possesses the faculty of writing with ease while maintaining the reader's interest from beginning to end although dealing with details sometimes more or less prosaic. It is the colour which Sir William Ramsay gives to his pictures of ordinary everyday experiences which compels attention. The essays now contained in this volume have been delivered as lectures or published as magazine articles at various times in the course of the last 25 years. That period marks a rapid growth of scientific knowledge and discovery and so in some cases certain statements have had to be revised in order to be brought into line with modern advances.

It is difficult to decide whether Sir William Ramsay writes more attractively as a biographer or as an essayist discoursing on subjects on which he is so eminent an authority. We think the reader with some scientific bent will find the accounts of the life and experiences of great scientific men to be written with greater force and feeling than the essays on chemical subjects. The story of Berthelot's domestic life is most charmingly given, whoever reads the opening lines will be forced to go on to the end. The author works in a more serious vein when he deals with the life of Joseph Black, and the same may be said of his appreciation of Lord Kelvin, although he takes the opportunity when it offers of recounting a few humorous incidents in both their lives. It is well, we think, that he has chosen to deal at a greater length with the men who laid so truly the foundations of chemistry, the great London chemists as he calls them—namely, Boyle, Cavendish, Davy, and Graham, because it is not generally remembered that London was the scene of the labours of those men who gave such an extraordinary stimulus to the study of chemical science that our chemical achievements have been placed so far well ahead of those in other countries. The essays conclude with an oration delivered at University College, London, on "The Functions of the University." Primarily Sir William Ramsay describes the University as a technical school for theology, law, medicine, and engineering, but it ought to be also, he holds, a place for the advancement of knowledge, for the training of philosophers, and for those who love wisdom for its own sake. This collection of essays affords most attractive and instructive reading to all those who take an interest in the attempts to solve the many problems with which nature surrounds us.

Clinical Lectures on Neurasthenia. By THOMAS DIXON SAVILL, M.D. Lond., Physician to the West End Hospital for Diseases of the Nervous System. Fourth edition. London: Henry J. Glaisher. 1908. Pp. 226. Price 7*s.* 6*d.* net.

Dr. Savill's study of neurasthenia has done much to establish the essential nature of this protean functional disorder, and we agree with him in deprecating the tendency of some authors to separate off special symptomatic varieties such as cardiac, gastric, or pulmonary. No doubt it may eventually be possible to distinguish various forms on an etiological basis, but meanwhile Dr. Savill's classification of the chief causes into toxic blood states, malnutrition, fatigue and over-functioning of the nervous system, emotional shock, and traumatism is convenient and helpful in regard to treatment. In the preface to this edition Dr. Savill once more affirms his view of the pathology of neurasthenia—viz., that a condition of auto-intoxication resulting from antecedent gastro-intestinal disorder is the important causal factor in a majority of the cases, although he admits that there exists in all neurasthenics some degree of weakness of the nervous system, inherent or acquired, which renders the nervous system vulnerable. The chief evidence offered in support of this is that the gastro-intestinal symptoms which are universally admitted to be so common a feature in neurasthenia are antecedent in point of time, which, as we

pointed out in our review of the third edition, is not sufficient proof, since it is equally competent to regard the gastro-intestinal symptoms as the initial expression of the functional nervous derangement. Dr. Savill brings forward no fresh evidence and his view, suggestive though it be, cannot be regarded as proved, since the therapeutic test which he emphasises, that "treatment which will cure or relieve these antecedent disorders will in most instances cure or relieve the neurasthenia also," is not quite convincing; the treatment directed to relieving the gastro-intestinal disorder—viz., careful diet and Weir-Mitchell treatment—is equally directed towards restoring the exhausted nervous system. It must be confessed that the problem of the etiology of the condition is a highly complex and obscure one.

In regard to treatment Dr. Savill is particularly suggestive and his remarks are of special value. He is careful to recommend a more optimistic attitude in this regard than is the custom of some practitioners. He appends to this edition a Note on the Psychology and Psychotherapy of Neurasthenia, otherwise there is little difference between this edition and the third edition, in reviewing which we testified to the admirable way in which a difficult subject is dealt with.

LIBRARY TABLE.

The Eye, its Elementary Anatomy, Physiology, and Optical Constants. By LIONEL LAWRENCE. London: The Orthos Press. 1908. Pp. 100.—This book is an elementary and fairly accurate description of the anatomy and physiology of the eye, written presumably for opticians. The proofs have been revised by Dr. G. Lindsay Johnson who should not have allowed certain inaccuracies to persist. For example, the pigment cells of the iris have nothing to do with replenishing the aqueous so far as we know. The canal of Schlemm is described as a lymphatic, with the additional statement that "it is thought by some anatomists to be a small vein." The extraordinary confusion which has crept into so many text-books with regard to the angles α and γ is perpetuated to the full in this manual. Chapters II. and III. deal with vision and colour vision respectively. The last chapter treats of the optics of the eye. Formulæ are stated without showing how they are arrived at. Opticians should, of course, have some elementary knowledge of the anatomy of the eye, and on the whole this book will serve as a satisfactory introductory manual.

Nervous and Mental Diseases, for Students and Practitioners. By CHAS. S. POTTS, M.D. Second edition. London: Henry Kimpton. 1908. Pp. 570. Price 12*s.* 6*d.* net.—This is an enlarged edition in which is incorporated an account of the advances which have been made in neurology and psychiatry since the first edition was published. The work has grown by about 100 pages. The first five chapters of the work are devoted to general anatomy, pathology, symptomatology, and treatment, while the remainder of the neurological part of the book is an account of special diseases. The anatomy and pathology are at least sufficient for those for whom the work is intended, while the description of the diseases with which the book is concerned is lucid and succinct and illustrated with not a few admirable pictures and diagrams. We are glad to note that the author appends to his description of the procedure of lumbar puncture a warning as to its indiscriminate use. Unfortunate results attending this seemingly trifling operation have been not infrequent. We note with some surprise that in a daily programme for one undergoing a rest cure eight ounces of malt extract are ordered to be taken with the meals. In this country the amount would be regarded as enormous. There are a few points upon which we do not find ourselves in complete accord with the author; for example, the statement that optic atrophy is never found in Friedreich's disease, the introduction of syphilis among the etiological factors of posterior basic meningitis, the application of the term "anorexia nervosa" to hysterical vomiting, and the term "hystero-epilepsy" to the paroxysmal stage of hysteria, and the confounding of delirium tremens with mania a potu. It is strange that in a book written in the land of Flexner no mention should be made of his serum for the treatment of epidemic cerebro-spinal meningitis. The section devoted to mental disease is short, too short, we think, to present an adequate account of an extraordinarily complex subject. We can recommend the work to those who desire a manual of neurology treating the subject rather more fully than it is usually treated in the average text-book of general medicine.

The Science Year-Book, 1909. Edited by Major B. F. S. BADEN-POWELL. London: King, Sell, and Olding, Limited. Price 5*s.* net.—This is both a diary and a book of reference for all who are engaged in scientific pursuits. The diary portion of the book gives a page to a day with various astronomical references at the top of each page, the rising and setting of the planets and so forth; while the other division of the compilation contains a large amount of information useful for daily and occasional reference in the study and the laboratory. It includes astronomical, physical, and chemical tables and a biographical directory. There are also a glossary of recently introduced scientific terms and names and a useful though brief summary of the progress of science in 1908. Among the additions to the current issue is a table of the vegetable kingdom and the metrological tables have been both added to and revised.

JOURNALS AND MAGAZINES.

The Edinburgh Medical Journal.—In a Presidential Address delivered before the Edinburgh Obstetrical Society, which is published in the January number of this magazine, Professor William Stephenson calls attention to the work of Four of our Forefathers in Midwifery—William Smellie, William Hunter, Thomas Denman, and John Burns—and illustrates the gradual advance that has taken place in obstetrical methods. Dr. F. Parkes Weber records a case of congenital heart disease with extreme secondary polycythæmia and orthostatic albuminuria, and Sir George Thomas Beatson, continuing his papers on Diseases of the Breast, describes a case of sarcoma of the female mamma. Dr. Horace C. Colman contributes some notes on acute rheumatism in children and emphasises the value of sodium salicylate in the treatment of endocarditis.

The Dublin Journal of Medical Science.—The first issue of the new year opens with a paper by Dr. Walter G. Smith on Baths and Mineral Waters, containing some commonsense criticism of the many fallacies connected therewith. Dr. D. P. FitzGerald writes on the study of developmental abnormalities as an aid to that of human embryology, basing his remarks on a case of persistent left superior vena cava; and Dr. C. G. Cumston of Boston publishes the first part of a comprehensive study of the measures advised for sterilisation of the hands before surgical operations, this instalment being historical in form.

The Medical Chronicle.—In the January number Dr. J. D. Rolleston records a case of gangrene of the eyelid occurring in varicella and comments on other ocular lesions which may happen in this disease. Dr. R. T. Williamson writes on heredity in diabetes mellitus, which he believes to be a recognisable factor in some 22 per cent. of all cases; and Dr. C. Christopher Heywood discusses the value of Calmette's

tuberculin reaction, concluding that, while by no means infallible, it is a valuable help to diagnosis.

West London Medical Journal.—The January number opens with an interesting account of West London rivers, extant and extinct, and of their influence now and in the past on the health of the district. Dr. Herbert A. Smith writes briefly on psycho-neurasthenia, emphasising the value of suggestion in the treatment of the condition.

The Birmingham Medical Review.—Dr. William H. Wynn contributes to the December issue of this magazine a paper on Irregular Action of the Heart, reviewing recent work on this subject; he distinguishes the different varieties, such as nodal rhythm, extra systole, and so forth, and calls attention to the influence of this work on our views as to the use of digitalis and other cardiac tonics. Mr. Bernard J. Ward writes on the significance of hæmaturia in the diagnosis of urinary disease, showing the errors that may arise from undue trust in some of the commonly accepted rules on this subject and the importance of cystoscopic examination in all cases. Mr. W. Belcher records an unusual case of thoracic aneurysm which formed a large tumour on the back of the thorax, and Dr. Claude Johnson one of acute lymphatic leukæmia in a boy, aged two years, which proved fatal in a little over one month.

New Inventions.

A SLING-PILLOW.

THE Medical Supply Association, 228 and 230, Gray's Inn-road, London, W.C., send us the following particulars concerning a sling-pillow devised by Mr. J. A. Cairns Forsyth, of which we print an illustration. The sling-pillow has been devised for keeping patients in the

semi-recumbent and "Fowler" positions. The sling-pillow is placed under the thighs and the straps are fastened to the top bar of the bed head. In this way the body may be raised at any angle. The sling-pillow might be found very useful in the after-treatment of abdominal section cases, especially those where the operation has been in the upper abdomen, and also in nursing cases of pneumonia, bronchitis, and pericarditis.

A NEW COMEDO EXPRESSOR.

NOT being quite satisfied with the comedo expressors at present in use I have had a larger instrument made by

Messrs. Mayer and Meltzer, which is depicted in the illustration. It is in the shape of a blunt fenestrated curette, slightly bent at the end, and altogether a little over four inches long. In the figure it is shown three-quarter size.

G. PERNET.

MEDICINE AND THE LAW.

Company Formed to Carry on Dentistry.

THE case of Attorney-General *v.* George C. Smith, Limited, and George C. Smith, which came before Mr. Justice Swinfen Eady on Jan. 23rd, raised an important point under the Dentists Act, 1878. By Section 37 of that Act "a person shall not be entitled to take or use the names or title of 'dentist' (either alone or in combination with any other word or words), or of 'dental practitioner,' or any other name, title, addition, or description implying that he is registered under this Act, or that he is a person specially qualified to practise dentistry, unless he is registered under this Act. Any person who after the 1st August, 1879, not being registered under this Act takes or uses any such name, title, addition, or description as aforesaid shall be liable on summary conviction to a fine not exceeding £20, provided that nothing in this section shall apply to legally qualified medical practitioners." A company was formed in 1906 to carry on the business of G. C. Smith, whose name, formerly on the Dentists Register, was struck off on May 22nd, 1906. An action was brought at the instance of the British Dental Association against the company and G. C. Smith, the sole director, to restrain the company from representing that they were carrying on the business of a dentist or surgeon-dentist as successors to G. C. Smith or that they were persons specially qualified to practise dentistry. The cases of Rex *v.* Registrar of Joint Stock Companies (1904, 2 Ir. R. 634) and Attorney-General *v.* Myddletons Limited (1907, 1 Ir. R. 471) were cited. In the former of these cases the memorandum of association of a company proposed to be formed for the purpose of carrying on the business of teeth extracting and artificial teeth making provided that the name of the company should be "S. G. Rowell, Dentist, Limited." None of the signatories to the memorandum (one of whom was S. G. Rowell) was registered as a dentist under the Dentists Act, 1878. The Registrar of Joint Stock Companies having refused to register the memorandum of association under the Companies Act, 1862, it was held that a *mandamus* would not be granted to compel him to do so, since the use by the company of the proposed name would involve a false representation, tending to mislead the public. In the Myddletons Limited case in 1907 it was held that although the word "person" in Section 3 of the Dentists Act has been held not to include artificial persons and not to apply to limited companies, a limited company is not at liberty to use the word "dentist" or its synonyms in such a way as to amount to a false representation calculated to induce the public to believe that the individuals whom it comprises or employs are qualified "dentists," and may be restrained from doing so by injunction at the suit of the Attorney-General. In the case the other day Mr. Justice Swinfen Eady held that the company was a "person" within the meaning of the section and must be restrained by injunction from representing that they were carrying on, or intended to carry on, the profession or business of a dentist or surgeon-dentist as successors to G. C. Smith, surgeon-dentist, or that they were dentists or dental practitioners, or by any name, title, addition, or description, or any title, addition to a name, designation, or description, whether expressed in words or letters, or partly in one way and partly in another, implying that they were registered under the Dentists Act, 1878.

INDIAN MIDWIVES.—The *Times of India* announces that Lady Dane, wife of the Lieutenant-Governor, Sir Louis Dane, C.S.I., has been invited to perform the opening ceremony of a school for the training of Indian midwives which is about to be started at Delhi for the benefit of all classes and ranks of society in the Punjab. The idea originated with Hazik-ul-Mulk Hakim Muhammad Ajmal Khan, a physician and leading Rais of Delhi. It was enthusiastically taken up by other notables of the city, and a strong committee was formed whose efforts have been crowned with success. Within the last few months the Mir of Khairpur, the Maharaja of Darbhanga, and the Nawab of Maler Kotla have become patrons of the institution and about 40,000 rupees have been received, a sum expected to prove sufficient to discharge the initial expenditure.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 6, 1909.

The Registrar-General's Report

WE are indebted to Sir WILLIAM DUNBAR for a copy of his recently issued report on births, deaths, and marriages during the year 1907. We do not propose to do now more than glance superficially at the contents of this volume with its masses of tabular information on vital statistics, and, what is of great assistance to the busy reader, with its well-executed series of diagrams illustrative of the main facts derivable from the tables. On a future occasion we hope to review in detail the contents of the report and to discuss its salient points for the information of our readers.

The present report is the seventieth of the series, of which the first number was published in 1839 by Mr. LISTER, the first Registrar-General of England. At the time of the passing of the first Registration Act (1837) only scanty materials existed for the preparation of national statistics either of births or of deaths, whilst as regards the previous history of these events the only records available were the more or less incomplete ones obtainable from the parochial registers. Our readers will not be surprised to learn that the earlier numbers of this series have long since been out of print, but, by the courtesy of the Registrar-General, we have been allowed access to those of them which are not already in our own library. Among the many blue-books which come to us in the course of each year there is not one that has for our profession a tithe of the interest which attaches to the publications of Somerset House. To medical officers of health the Registrar-General's reports are, of course, indispensable, containing, as they do, standard or, as Sir EDWIN CHADWICK termed them, "normal" rates of birth and mortality with which the corresponding data for the several urban and rural sanitary districts of England may be compared. In all investigations on the causes and nature of disease, such as those now in progress respecting cancer and tuberculosis, they are the trustworthy, and in fact the only, works of reference. To these, as to a recognised authority, successive Royal commissions and departmental committees turn for official statistical information, whilst the hospital physician and the operating surgeon should, and sometimes do, look to them for guidance concerning the variations of particular types of disease from one year to another. They moreover furnish invaluable assistance to the medical staff of the Local Government Board, for they supply timely warning of abnormal local incidence of such conditions as tuberculosis, pneumonia, cerebro-spinal fever, and other diseases which are not at present generally registrable under the Notification Act. The excessive occurrence of these diseases in certain districts may indicate some dereliction of duty on the part of the sanitary authorities, when the necessity of assisting the locality with expert advice, and possibly with reproof, will be within the discretion of the Local Government Board as the central authority. The Registrar-General endeavours to render comparable the official records of local mortality by most careful correction for age and sex differences of the living, and in some instances by the distribution of institution mortality, but as this process involves the examination of more than 500,000 death-entries annually we can appreciate the difficulty of issuing the detailed report as promptly as would be convenient for administrative purposes, though we know that the Registrar-General regrets the inevitable delay.

With the general arrangement of this report we have only one fault to find, and without special knowledge we hesitate to say that even this is a remediable one. Medical officers of health frequently complain that the areas dealt with by the Registrar-General do not in the remotest degree correspond to the administrative areas of the Local Government Board, or to the municipal, the county, or the rural areas with which their daily work is concerned. The result is that local vital statistics have to be compiled by medical officers of health, whose time is, or should be, occupied by inspectorial or other preventive work. In comparing for practical sanitary purposes the areas of the Registrar-General with the administrative areas of the urban and rural local authorities there is something to be said in favour of the former. The registration areas have at least the merit of continuity, whilst the boundaries of the municipal authorities are perpetually extending in conformity with the steady urbanisation of rural areas which is everywhere proceeding. The subdistricts of the Registrar-General number more than 2000; if, therefore, these subdistricts could be so grouped as to correspond to the administrative areas of the county councils, the municipalities, and the rural sanitary authorities it is obvious that increased efficiency, together with economy, would result. We shall resume our consideration of this report at an early date.

Some Thoughts about Pain.

FROM the earliest ages, from the first time that men began to think, the origin of pain has troubled the human mind. Inasmuch as pain is inflicted by one man on another mainly as a punishment for actions which that other has done, the first idea that arose was that pain arising from unperceived causes must be the punishment of some deity or some power of nature which had been wronged or offended by human action, and the earliest prayers and offerings were in all likelihood intended to mitigate or to remove the wrath of the outraged deity and not merely to obtain some blessing. The more our knowledge extends as to the beliefs of primitive races the more certain we become that the starting-point of prayer is fear of pain. The storm and the earthquake, the flood and the drought, cold and famine each showed to primitive man, as is shown to many of his successors, his powerlessness amidst the convulsions of nature or the inclemencies of the seasons; so man was led to attempt to propitiate the unknown powers that can cause and can make to cease the manifestations which he dreads. In conditions that may be called civilised men have been

found willing at the command of their priests to sacrifice their nearest and dearest to the offended gods, to cast into the flames their own children, and to give up their wealth if only they may attain peace from a devastating foe or food in famine; for the disasters, they felt, must be the outcome of some wrong-doing, intentionally or unwittingly performed, a punishment which cannot be escaped except by the propitiation of the offended gods. We find through the ages that misfortunes of all kinds, and pain among the number, are looked upon as punishment for sin. JOB'S three friends acknowledge that he has always appeared upright and honest in his dealings, but they fear that that is only because he has kept his sin hidden; the mere fact that he has suffered so many and great misfortunes is in itself clear evidence that he must have sinned and sinned greatly. Even at the present time there are many, well-meaning and religious people though they are, who decline to look upon misfortune occurring to others as anything less than the just punishment of some secret sin.

Of all the misfortunes which man may suffer the most striking and the most obtrusive is certainly pain. Loss of wealth may be for a time at least forgotten, and there are many compensations; loss of strength may matter but little, but pain cannot be put aside; it may banish sleep, that sovran cure for the ills of mankind; it cannot be forgotten and it becomes an obsession, for it denies the claim of the mind to consider aught else. Since, then, pain so thrusts itself on our attention it is well worth while to consider the real meaning of pain. Why does pain exist? In its origin pain is protective; it was evolved for the benefit of the organism which feels it. The well-known experiments in which a headless frog withdraws his foot from irritating liquids or removes an irritation from his leg show that the displacement of a source of irritation has been arranged for in the reflex mechanism of the body. In these and similar experiments we see definite reflex arrangements for the removal of irritants without any association with sensation and therefore without any pain. The appearance of sensation, whether pleasurable or painful, complicates the effect of a stimulus, for it superimposes intention to the pre-existing reflex mechanism. It has been suggested that both pleasure and pain are merely epiphenomena and not causally related to the efforts, but this is clearly wrong. The object of pain is certainly to increase the efficacy of the movements which result from the application of an irritant. While the movements are purely reflex, they are on the whole well calculated, in simple cases at least, to remove the source of irritation. But cases may readily occur in which the ordinary reflex movement will prove harmful and not beneficial. For such occasions the aid of the intellect is needed, and this assistance is invoked by pain. Pain, then, in its inception was wholly benevolent, and did it not exist the organism itself would rapidly come to extinction. Even in the fully developed being loss of sensation of any part with loss of capability of feeling pain leads to the persistence of injuries to which painful sensations would have put an end at the very commencement, and Dr. HUGHLINGS JACKSON'S interesting paper in our columns this week includes a striking example of this fact. It is to be noticed that we cannot imagine the evolution of pain before the existence of motor mechanism by which the organism can remove the source of the pain. It may be asked at how low a point in the animal scale the idea of pain was evolved. The answer is that pain commenced probably as a mere discomfort and that its intensity increased with the development of the organism. Therefore under pain in its widest sense we must include all unpleasant sensations from the faintest discomfort to the most intense suffering. Originally, then, all forms of pain were intended to serve the useful purpose of preserving the organism from harm, but numberless instances occur in which the pain is out of all proportion to the benefit to be derived and pains occur from which no benefit can in any way accrue. In these circumstances the doubts of many as to the origin of pain are not unreasonable, but a full consideration of the whole subject will show clearly that the gain far outweighs the loss. On the sensitiveness of animals to pain depends their very existence.

If we accept without reserve this view of the original beginning of pain we must acknowledge that in many cases we meet with phenomena which appear to be inconsistent with it. By no means rarely it happens that the uneasiness produced by a small pain is much greater than that resulting from a severe pain. There are many who will endure with fortitude a pain which is truly great and yet they may be rendered incapable of doing any work by some small but persistent source of discomfort. By a powerful exercise of the will it is possible in many cases to overcome the influence of intense pain, so that the sufferer may be able to carry on mental work for which the closest application is necessary; it needs a great mental effort, but it can in many cases be done. The pain can for a time at least be put into the background. This is not always possible with pains of less intensity, especially if there be an element of irritation in the pain. True irritation is distinct from typical pain and yet it is merely a special kind of pain. Irritation will not let itself be ignored; it thrusts itself to the front. A very small amount of irritation may be able to prevent entirely any continuous mental application; the strongest effort of the will may be made, but in vain; the irritation makes itself felt. In circumstances such as these an acute pain is preferable to the irritation, for it is more endurable, and so we find that sufferers from irritation will scarify themselves, inflicting acute pain, but removing for a time at least the irritation which they dread. It often happens that laws, just and useful in their general application, are useless and even harmful in special cases, and so it is with pain. It is seen to be of the greatest value when we look at nature as a whole, but numberless instances are met with in which pain is useless and only harmful. In those who practise medicine the alleviation of suffering is of prime importance, but they of all men must bear in mind that the removal of the cause is the only true method of the removal of pain. To drown a pain, to obtund the parts so that no pain is felt, is to throw away the warning which the pain has given. Only when the removal of the cause is beyond human skill may we content ourselves with mere relief of the pain.

Journalism and Literature.

THE Authors' Club, of which a considerable number of medical men are members, is in the habit of holding weekly house dinners, at each of which some gentleman of suitable position is entertained as a guest of the club and is invited to open a conversational discussion after dinner upon some subject selected by himself. On a recent occasion the guest was Mr. ST. LOE STRACHEY, the editor of the *Spectator*, and the subject which he suggested was the inquiry, Are Journalism and Literature Incompatible? It will probably be thought by many well-known writers that the question could scarcely be regarded more seriously than the analogous one suggested for a similar purpose by CANNING—the question whether a black woman was a member of the fair sex; while even those most disposed towards argument would be likely to hold that Mr. STRACHEY himself had been engaged for many years in furnishing a convincing negative reply. Perhaps for this very reason, although it was opened with great skill and spirit, the conversation somewhat languished, and, indeed, produced little more than an expression of the not unreasonable belief that the strain of the necessity to turn out three novels a year might be even more unfavourable to the production of "literature" than journalism itself. To us, of necessity, the question presents itself under a somewhat limited aspect and assumes the form of how far writing upon medical subjects, whether in the form of journalism or of volumes, is entitled to be described as literature. We have heard such a claim totally denied, on the plea that although the hair of NEÆRA, or the smiles and accents of LALAGE, might be described in literature of the highest order, no similar claim could be made with regard to other bodily structures or functions, about which medical authors are compelled to write and which NEÆRA and LALAGE share with the least attractive of their sex. Thus regarded, the matter almost resolves itself into one of definition; and we cannot but turn to the New Oxford Dictionary as the highest and most recent authority. It tells us that "journalism is the occupation or profession of preparing any periodical publication containing news or dealing with matters of current interest in any particular sphere," and that "literature," originally meaning literary production as a whole, is "now applied in a more restricted sense to writing which has claim to consideration on the ground of beauty of form or emotional effect." On this definition it seems to us quite possible to describe as literature a large proportion not only of the work of medical writers generally, but also of that, some of it of ephemeral character, which appears from week to week in our own columns. Few writings have better claim to "beauty of form" than most of those which proceed, let us say, from the Regius professors of medicine and of physic at Oxford and Cambridge; few subjects, if properly handled, are better calculated to produce emotional effect than those which deal with great victories won by science over some of the most destructive enemies of the human race.

There can surely be no reason why the practice of dealing with "matters of current interest in any particular sphere" should be antagonistic to the qualities from which written composition mainly derives its "literary" character; and the excuse commonly made for this antagonism, that it depends upon the speed necessary to catch folly as it flies, seems hardly calculated to bear examination. The faults by which journalism is deprived of the literary character which should properly belong to it depend mainly upon the use of words without due regard to what they mean, to the fancied "picturesqueness" of vulgarisms, and to a variety of errors which it would be quite as easy to avoid as to commit. In the case of some newspapers there may be sound commercial reasons for divergences from accuracy and good taste—they know their audiences. A vulgar crime is possibly a better magnet for coppers when it is called a "mystery," and the evidence of Mrs. Smith, to the effect that she saw the accused only a quarter of a mile away from the place where the crime was committed, is manifestly more saleable for being described as a "startling revelation." These are mere examples of lies told for the sake of disposing of worthless materials, like the ordinary lies of only too many forms of trade; and their introduction into the business of purveying news is largely attributable to the introduction of American methods, and primarily, of course, to the existence of an enormous uneducated public eager to know what is said and absolutely careless about knowing what is true. Wheresoever the carcase is, there shall the eagles be gathered together; and the carcase, in this case, is the unfinished product of that schooling which, even in classes above the lowest, too often masquerades as education, while it neglects the cultivation of many faculties upon the activity of which genuine education must depend. The evil is one which will tend, in all probability, gradually to correct itself. In 1840 about 33 per cent. of the men who were married in England or Wales, and about 50 per cent. of the women, were unable to sign the register; while these numbers were reduced in 1907 to 1·4 and 1·7 per cent. Now that some degree of reading and writing is almost universal, it is not too much to hope that consideration of the quality of what is read, even in popular newspapers, may in due course of time come to be developed.

So far as medical writing is concerned, the chief obstacle to the maintenance of the truly literary character is that which arises from the abuse of technicalities, many of them illiterate in the most extreme degree: illiterate because compounded of Greek or Latin words, or even of Greek *and* Latin words, the real significance of which bears no relation to that which it is desired to express. The ancients had not the ideas, and consequently had not language in which to convey them. A correspondent of the *Times* recently wrote that, when he first met with the compound "karyokinesis," he thought it must be an attempt to express in Greek derivatives the game with cocoanuts which is known on racecourses as "three shies a penny"; and it is at least certain that, until it was explained, no one could know what it was really intended to mean. We admit that for purposes of brevity and for definiteness of argument alike the use of technical language is very necessary in medical writing, but we suggest that too much reliance is nowadays placed upon it, while we regret the barbarity of some of the invented terms. We are strongly

of opinion, and have more than once said, that the neglect of English style and the misuse of classic words, both too often to be encountered in the writings of authors who desire to be regarded as men of science, are conditions which powerfully impede the acceptance of science among the really literary classes of the community, to whom a verbal solecism is as repugnant as a false quantity, and in whose minds a pretentious misuse of Greek or of Latin produces boredom. A great deal of the prevailing physiological and pathological verbiage might be accurately described as consisting rather of slang than of technicalities, and it is characteristic of slang to be evanescent. May we not, even on this ground alone, urge upon men of science, and especially upon men of our own profession, the advisability of discarding slang in favour of the more abiding elements of language, so that their works, read by their contemporaries for the sake of the instruction which they afford, may be read also by posterity as examples of style and as the raw material of history. It were surely a worthy ambition to seek to leave something so written that posterity "would not willingly let it die"; and success in such an endeavour would have the incidental effect of showing that even strictly professional writing may fulfil all the conditions necessary to satisfy a sound definition of literature. Whether those conditions can also be fulfilled by medical journalism it is not for us to decide.

Annotations.

"Ne quid nimis."

RADIUM.

THE recent announcement of the formation of an institution in which the physiological and therapeutical effects of radium salts or their emanations are to be minutely studied will be received with satisfaction, since it must be recognised that the remarkable results claimed to have been obtained in certain quarters have not so far admitted of that explanation which scientific medicine demands. The application of radium emanations in disease has only proceeded on purely experimental or empirical lines, and no doubt in some cases remarkable results have been achieved, but we are still left in the dark as to the exact way in which the emanations act. The lay mind has in many instances jumped to the conclusion that in radium a panacea for cancer has been found, a view which no doubt will be disturbed when the nature of the action of radium on tissues is understood; for in fact it receives no support from the experiments so far tried, since favourable results have only been recorded in certain conditions. That the action of the radium emanations is a complex one chemically, physiologically, and therapeutically admits of little doubt, but it is interesting to record that experiment has already shown that radium emanations appreciably increase the rate of autolysis of tissues, especially in the expressed juices from certain carcinomatous growths, and if the power of the emanations consists in encouraging the self-digestion of tissues in the absence of micro-organisms (which is autolysis) it is possible that an agency has been found which may reverse the dire progress of certain diseases. In general radium would appear to act as an oxidising agent, and it has recently been suggested that the huge beds of nitrate found in Chili owe their origin to the action of radium on the nitrogen of the air. The soil in those regions, at all events, has been found to be considerably radio-active. The view that the healing power of certain natural medicinal waters is due not so much to the ordinary chemical constituents as to the radio-activity which apparently most mineral waters to a more or less degree possess, becomes strengthened also in the light of recent work, while we may have here an explanation as to why natural mineral water so far cannot be imitated so as to give the same therapeutic results. The *régime* and treatment enjoined at health resorts have a favourable effect on the individual doubtless in most cases because metabolism is improved and it remains to be seen what the influence on metabolism may be of a course of subjection to radium emanations; one of the points to be determined will be whether any benefit resulting arises simply out of healthy oxidation being promoted by the radium emanations or out of much more complex actions. The value to clinical medicine of investigations into radium will be much enhanced if the work can be carried on in general hospitals as well as at the new institute, for in this way the evidence of the comparative value of the treatment in certain cases can be best arrived at.

VAGINAL EXAMINATIONS BY MIDWIVES.

THE Central Midwives Board having had its attention drawn to the fact that in certain instances the certificate of attendance on cases (Rules-schedule, Form III.) required from every candidate for examination has been signed on behalf of those candidates who have not complied with all the conditions imposed by Rule c 1 (i.) has passed the following resolution "which must be taken as indicating the minimum requirements of the rule:"—

> No case can be counted in which the pupil has not made abdominal and vaginal examinations (that is more than one), and has also personally delivered the head and body of the child and the placenta and membranes. This excludes all cases known as "B.B.A." (born before arrival), and also all cases in which the labour is too advanced on arrival to make (repeated) abdominal and vaginal examinations possible. It also forbids the same case being counted to more than one person. The fact that medical help becomes necessary to apply forceps or otherwise assist delivery does not prevent the case being counted to the pupil.

Now, nothing could be more unfortunate than such a rule actually sanctioning and even requiring that "repeated vaginal examination" should be made in every case delivered in the face of modern experience and teaching. As far back as 1886 Credé wrote: "Even the simplest manipulation may cause infection. It should, therefore, be laid down and taught as a fundamental principle that internal examinations of parturient women should be altogether avoided or restricted within the narrowest possible limits. It can be very well replaced by external examination. To instruct their pupils as thoroughly as possible in this method is the present and future duty of teaching institutions." At the Rotunda Hospital (the largest maternity hospital in the British Empire) and at the New Maternity Hospital in Belfast one of the main points taught to the students and nurses is to endeavour to avoid vaginal examination in order to do away with the greatest danger at childbirth of both mortality and morbidity. In speaking of the selection of nurses Mr. E. H. Tweedy, Master of the Rotunda, writes in his "Rotunda Practical Midwifery" (Oxford Medical Publications): "For ourselves [Mr. Tweedy and Dr. Wrench] we always tell the nurse to refrain from making vaginal examinations" (p. 37); and in one of the most scientific textbooks of midwifery of the present day Dr. J. Whitridge Williams (the head of the great obstetric clinique at the Johns Hopkins Hospital) writes, p. 304 (second edition), under the head "Directions for Obstetrical Nurse": "Don't examine patient vaginally under any circumstances." The suggestion of the Central Midwives Board requiring midwives to produce evidence of their having made "repeated vaginal examinations" is contrary to much present teaching at home

and abroad, and if persevered in will be considered by many to have the effect of increasing puerperal fever. It might also be suggested that the nurse or medical man endeavouring single-handed to perform all the operations suggested in the above resolution of the Central Midwives Board would find it hard to satisfy the requirements of aseptic midwifery.

AN APOLOGUE WITH A SANITARY APPLICATION.

SOME will remember a delightful apologue published about 20 years ago by Mr. Andrew Lang and entitled "The Romance of the First Radical," which told of the adventures of Why-Why, an inquiring young brave who belonged to a prehistoric tribe. Why-Why proved by successive experiments in his boyhood that the unpleasant tribal customs upon which he was expected to mould his conduct were based on no logical grounds, but were dictated by a senseless tradition and enforced by the crafty old medicine men of the tribe. Having quite satisfied himself of this truth by killing a snake which was sacrosanct, and by eating oysters which were *tabu* for all but warriors and elders, without meeting with any terrible fate in consequence, he embarked upon a career of lurid innovation which he finished by mating with a girl of his own totem, a piece of sacrilege that brought upon him the fatal vengeance of his tribe. The application of this pretty fable is sufficiently clear, and we were reminded of it by receiving from Dr. Wilfred Watkins-Pitchford a pamphlet on "Hygiene in South Africa," containing his presidential address to the Public Health Section of the South African Medical Congress at East London in September last. In this address due stress is laid on the importance of the attitude of individuals to the hygienic customs of the community, especially as regards their clothing, their food, and their dwellings. Dr. Watkins-Pitchford remarks that criticism of the utility of social customs is especially justified at a time when the inhabitants of a comparatively new country are moving to combine themselves into a great nation, for at such a season reforms may be most readily carried out and new ideals established. He points to the clothing worn by Europeans in South Africa as the custom which invites the most trenchant hygienic criticism, but with the experience of many generations of Why-Whys behind him he adds that no reform would be more stubbornly opposed than a reform of clothing, tradition, custom, and fashion being the implacable enemies of all progress in this direction. It is, indeed, surprising to read that the materials and colour of South African garments are still largely prescribed by the requirements and prejudices of people in England. When our forefathers began to colonise tropical and subtropical countries they took with them clothes which differed little, if at all, from those of the home material and fashion, and everybody knows that within comparatively recent years our soldiers were obliged to go through their Indian and other foreign service with the same outfit as they wore at home, with the sole addition of a scrap of white linen to hang from their helmets. We were under the impression that the majority of British colonists in hot climates had at length modified their clothes, at least for every-day wear, in some such manner as has been done for the British troops amongst them, but Dr. Watkins-Pitchford's sermon shows this not to be the case in the country of his adoption. He might have pointed to the change of manners at home in support of his protest, for of late summers the straw hat and the Homburg have nearly driven the time-honoured silken headgear from the London streets and the example of more than one learned judge has even sanctioned the doffing of forensic wigs during the hot weeks of the year. We commend Dr. Watkins-Pitchford's remarks on the subject to the notice of his professional brethren in South Africa. The topic is of real importance to the public health and there must be prime movers in every reform. It is both the privilege and duty of medical men to act as the sanitary Why-Whys of their custom-ridden communities, for even though in doing so they meet with some of the opprobrium which rewarded Mr. Lang's prehistoric "Radical," good sense and science must always win in the end. Dr. Watkins-Pitchford's address expresses in clear English the many questions other than that of clothing which every South African medical man should ask himself and his neighbours. We congratulate him upon his able statement of the hygienic responsibilities of the State and of the individual, and trust that his sanitary seed has fallen upon fruitful ground.

CANCER OF THE STOMACH IN A BOY.

SOME authorities teach that there is a tendency of cancer to occur at earlier ages than formerly, and from time to time cases are recorded remarkably early in life. In the *British Journal of Children's Diseases* for December Dr. R. Barclay Ness and Dr. John H. Teacher have reported a case of cancer in a boy aged 14 years and nine months. He was admitted into the Western Infirmary, Glasgow, on August 27th, 1906, suffering from intense jaundice which he said had been present about two months. He gave a history of paroxysms of abdominal pain at long intervals (sometimes two or three months) for two years. At first they were severe but of short duration, often lasting only a few minutes. In the last eight months they had gradually become more frequent and more severe, so that in the beginning of July he had to take to bed. About the middle of May he noticed a small hard lump at the umbilicus. It was not painful but the skin over it was red. Two months later suppuration occurred and a little pus escaped. Thereafter there was occasionally a little discharge. The jaundice began in the latter part of June. It became more intense until the middle of July, after which it varied in degree. With the onset of the jaundice the stools became light grey. Three days before admission a breakfast-cupful of blackish material streaked with bright red blood was vomited in the early morning before food was taken. The family history was unimportant. The boy was poor but his food was said to be sufficient. On admission he was poorly nourished, anæmic, and intensely jaundiced. At times he was seized with pain, when he preferred the dorsal decubitus position. On Sept. 10th he vomited brownish matter which gave the tests for blood. The stools were grey and very offensive. Once a black stool was found, evidently due to hæmorrhage high in the alimentary canal. The umbilical tumour was of the size of a cherry and covered with thin red skin and a greenish-yellow crust; it was not fixed to the deeper structure. Deep pressure in the epigastrium caused considerable pain but no tumour could be felt. The liver and spleen showed no enlargement. Three weeks after admission a small hard lump could be felt in the abdomen immediately above, and to the left of, the umbilicus; it was deeply fixed. The abdomen was more distended and contained fluid. The jaundice and ascites indicated pressure on the bile-ducts and portal vein. In an adult these, with the other symptoms, would have suggested malignant disease. The umbilical tumour was also in favour of this, but the occurrence of tuberculosis in this position in young subjects raised the question of tuberculous peritonitis with involvement of retroperitoneal glands and pressure symptoms. However, the umbilical tumour showed no tendency to break down as in tuberculosis. As the patient was getting worse exploratory laparotomy was performed on Sept. 24th. Five or six pints of fluid were removed. Tumour masses were found within the abdomen and one was removed for microscopical

examination. An anastomosis was made between the gall-bladder, which was distended, and the jejunum. Death occurred on the 29th. The necropsy showed the abdominal organs glued together by fibrinous exudation. The under surface of the diaphragm was covered with a thick yellow layer like wash-leather, in which were many small nodules. On the surface of the liver and spleen were numerous nodules. A large mass encircled the neck of the gall-bladder and hepatic ducts and occluded them. Microscopic examination showed that the masses were cancerous. The stomach contained dark-brown material. In the lesser curvature near the pylorus was a circular ulcer three millimetres in diameter. It appeared to be a simple ulcer, but there was unusual thickening of its edges, margins, and of the stomach around. White hard masses extended from this area to the liver and the gastro-colic omentum was full of nodules. The gastric tumour was a scirrhous cancer. The long history of pain is important in view of the fact that a gastric ulcer was found which may have been the origin of the malignant disease. Most cases of cancer of the stomach occur after the age of 40 years. In 3257 cases of cancer of the stomach collected by Professor W. Osler and Dr. Thomas Macrae 2·5 per cent. of the patients were below the age of 30 years. Below the age of 20 years the disease is extremely rare; they could collect only six cases in the first decade of life and 13 in the second.

TIN IN CANNED FOODS.

ON the whole there does not appear to be any very decisive evidence that tinned foods have caused bodily harm owing to any tin that may have been contained in them. In an excellent and thorough-going report on the subject just issued on behalf of the Local Government Board by Dr. G. S. Buchanan and Dr. S. B. Schryver, the latter gentleman states that in one experiment on a human being the excretion of tin kept pace for a fortnight with the intake when the latter did not exceed two grains daily. With an increased dose, however, in the third week there was some evidence of cumulative action. Dr. Schryver submitted himself to experiment and chose as a representative organic salt of tin the double tartrate of tin and sodium. During the first week the daily quantity of tin ingested was approximately one grain, the second week the daily quantity taken was two grains, and the third week three grains. The total quantity of tin ingested at the end of three weeks was thus 42 grains. No ill-effects were felt as a consequence of taking this quantity. There was in all cases a relatively small amount of absorption from the alimentary tract, as indicated by the small amounts of metal excreted in the urine. It appears that when tin enters the system by a channel other than the alimentary tract the metal is excreted, at all events in the case of dogs, in larger quantities in the urine than in the fæces. The results altogether appear to support Lehmann's conclusion that the possibility of chronic tin poisoning from consumption of tinned canned foods is extremely remote, even if it cannot be altogether excluded. Dr. Schryver adds that his experiments do not indicate much probability of serious risk of chronic poisoning by the absorption of non-irritant compounds of tin as a result of a diet which consists largely of canned foods and is continued over considerable periods of time. As Dr. Buchanan points out, this conclusion is in harmony with the fact that in the case of special communities (military and exploring parties, for example) where canned foods have formed a large part of the diet for a considerable period, no instances appear to have been reported in which deleterious effects have been attributed to metallic contamination of the food consumed. He very properly observes, however, that in the case of such communities it would usually be far from easy to refer obscure chronic ailments, which might be associated with particular foods, to their specific causes.

THE ELEVENTH INTERNATIONAL CONGRESS OF OPHTHALMOLOGY.

WE are asked to intimate that an effort is being made to arrange special terms for travelling expenses and hotel accommodation for the benefit of those who may wish to attend the above Congress which will be held at Naples from April 2nd to 7th next. We have also to remind our readers that it is proposed to issue for perusal before the meeting the communications which are offered for discussion at Naples. These will only be sent to those who have signified their intention to be present and have paid the Congress subscription in advance (25 francs for members and 10 francs for each accompanying member of a family). To facilitate these arrangements it is most desirable that those who wish to attend should make the earliest possible intimation to one of the corresponding members for Great Britain and Ireland, Mr. Walter H. Jessop, 73, Harley-street, London, W.; Dr. George Mackay, 20, Drumsheugh-gardens, Edinburgh; or Sir Henry Swanzy, 23, Merrion-square, Dublin.

THE EFFECT OF FORMALDEHYDE UPON DIGESTION AND HEALTH.

Dr. H. W. Wiley has recently made public the results of an investigation undertaken with a view of ascertaining the effect of formaldehyde upon digestion and health.[1] As in the case of previous investigations with boric, salicylic, sulphurous, and benzoic acids and their salts, the results are held by Dr. Wiley to condemn the use of preservatives in foods. The tests were conducted in the same way as in former cases, 12 healthy men voluntarily taking a prescribed diet for a given time and submitting to daily examinations, the temperature, pulse, body weight, and excretions being recorded. After a preliminary period of ten days of observation the preservative was given during 15 days and then the subjects were kept under observation for another ten days. The daily dose of formaldehyde varied from 100 to 200 milligrammes, a total of 2·5 grammes being administered to each man during the whole experiment. It was given in the form of an aqueous solution, mixed with milk, one-half of the men taking the milk as soon as the preservative was added, and the other half taking milk that had been so treated two days previously. No marked symptoms were noticed during the first ten days of the preservative period, but then headache and pain in the stomach and intestines became general, in many cases producing cramps, and in a few cases attended by nausea and vomiting, only two exceptions being noted. A burning sensation in the throat was reported in the majority of cases. In four of the subjects a well-marked itching rash appeared on the chest and thighs, causing great discomfort, slight symptoms of this nature being reported in a fifth case. From a general study of all the data Dr. Wiley draws the conclusion that the admixture of formaldehyde with food is injurious to health, even in the case of healthy young men, and therefore that in the case of infants and children the deleterious effects would be more pronounced. The metabolic functions were disturbed in a notable way, both by the retardation of the nitrogen and sulphur metabolism and by the acceleration of the phosphorus metabolism as shown by an examination of the excreta. There seemed to be a tendency to an increased absorption from the alimentary canal, indicating that formaldehyde has a stimulating effect

[1] Bulletin 84, Part V., Bureau of Chemistry of the United States Department of Agriculture; also published in condensed form, as Circular No. 42, for general distribution.

upon the intestinal digestive juices. The loss in body weight was found to be very slight, amounting to 0·2 kilogramme per day in the subjects taking freshly preserved milk and 0·5 kilogramme in those taking milk that had been preserved two days. An increase was noted in the volume of the urine and in the moisture in the fæces. Dr. Wiley argues that a retarded katabolism cannot be beneficial to health as old tissues cannot be expected to function as perfectly as newer tissues. There was a general tendency to produce a slight decrease in the temperature of the body which was probably associated with the retardation in the breaking down of tissues. There was also a slight tendency to produce albumin in the urine. Dr. Wiley finally concludes that the addition of formaldehyde to foods tends to derange metabolism, to disturb the normal functions, and to produce irritation and undue stimulation of the secretory activities. Its use, therefore, is never justifiable. Milk is the most prone of all ordinary foods to undergo deterioration and requires the most careful treatment, so that the temptation to use such an efficient preservative as formaldehye is great, especially in the summer. All the conditions which relate to its use deserve the greatest care and consideration because it is effective in minute quantities which are difficult to detect. Apart from the harmfulness or otherwise of formaldehyde, its use as a preservative of milk or cream is especially inadvisable because in dilute solution it prevents the growth of acid-forming bacteria while it does not retard the growth of many harmful micro-organisms. In other words, the milk is prevented from becoming sour and thus indicating its age, and the danger signal is removed while the other organisms which are capable of producing disease continue to multiply.

THE MEDICAL DEPARTMENT OF THE FRENCH ARMY: ITS EVOLUTION AND CAMPAIGNS, 1708-1882.

A VERY interesting work with the above title has been brought out in Paris by the publishing house Berger-Levrault, the authors being Surgeon-Major Brice and Captain Bottet, who are introduced in a laudatory preface by Inspector-General Delorme. Under the old *régime* army surgeons were either chosen by the colonels of regiments or else received commissions directly from the authorities at headquarters. In both cases the work consisted solely in attendance on sick soldiers, all administrative duties, including supply and command, being carried out by commissaries who alone were responsible for the maintenance of order in the military hospitals. In 1731 the Academy of Surgery was founded by Louis XV. at the request of his personal medical attendant, Dr. Mareschal, Duke of Bièvre. The surgical celebrities of the period who were desirous of serving their king and country were all members of this institution and used to meet regularly, when not absent on duty, for the discussion of technical matters, one of the subjects most frequently discussed being the nature and treatment of gunshot injuries. Amongst the more celebrated names in this category mention may be made of La Peyronie, La Martinière, La Faye, Ledran, Garengeot, Cat, Bouchet, Bazieu, Desport, and especially of Ravaton who is entitled to peculiar veneration as a founder of modern military surgery. The list of members included also the names of many practitioners of medicine who did much to improve the hygienic condition of the soldier. Amongst these were Rémy, Fort, Dezon, Portius, Jourdan, Le Cointe, Meyserey, Collombier, Hautesierck, and Dehorne, a notable syndicate under whose auspices was founded in 1782 the *Journal de Médecine Militaire*. In 1775 five schools were established in connexion with the military hospitals at Strasburg, Metz, Lille, Brest, and Toulon, which were thereby converted into nurseries for the army medical officers of the future. It was during the Revolution, however, and also under the Empire that the advancement of the French Army Medical Service was most conspicuous. Then it was that, in the words of a French contemporary,[1] the heroes Virey, Larrey, Desgenettes, Costé, Heurteloup, and Lorenti, men whose names are alike imperishably graven in the hearts of their fellow countrymen and on the brazen plates of the Arc de Triomphe, were destined to cover themselves with glory. On every battlefield of Europe did these patriots follow the soldier, enduring his fatigue, sharing his privations and assuaging his anguish. During the Restoration the chief medical figure in the army is that of Broussais, the iconoclast. To him, as to a sapper, nothing was sacred. The theories and doctrines of centuries yielded to his ardour and so great was his reputation that the whole of the rising medical generation used to collect at the Val-de-Grâce in order to listen to him. In Algeria the chief medical personality is Maillot. Of this great surgeon it may truly be said that it was he who rendered possible the colonisation of France's great dependency. Thanks to Maillot that province was doubly conquered; first, at the bayonet's point and secondly by quinine. With Maillot's name should be associated the names of Moricheau-Beaupré, Guyon, Hutin, and Baudens, the last named being with justice styled the Larrey of Africa. Not the least instructive portion of this interesting work is that devoted to the Crimean and Italian campaigns. The record is lamentable, but it is only by due consideration of the faults and defects of the past that success in the future can be assured. After years of failure and sufferance the autonomy of the French Army Medical Service was voted in 1882.

THE COST OF THE INEBRIATE REFORMATORY OF THE LONDON COUNTY COUNCIL.

THE Public Control Committee of the London County Council has issued a report in repudiation of certain criticisms which have been passed upon its policy in respect to the inebriate reformatory at Farmfield in the recently issued report of the Departmental Committee upon the working of the existing Inebriates Acts. The Departmental Committee included in its report a tabular statement of the approximate cost of establishment per bed in 11 certified public reformatories and put this figure for Farmfield at £403, in contrast to amounts ranging from £100 to £200 for seven other similar institutions. The Public Control Committee objects that the method adopted in making this comparison was unusual and unfair and that by the ordinary method of reckoning the cost of the Farmfield reformatory was £230 a bed. The Public Control Committee has strong reason to believe that five of the reformatories, which were apparently established at a very low cost, were involved in no heavy capital expenditure, but either hold their premises on lease or have converted disused workhouses to their present uses. The Departmental Committee has, however, taken the total capital expenditure as the basis of its reckoning and to this the Council's Public Control Committee objects. Neither does it agree with the Departmental Committee that buildings of a suitable nature could be erected for £150 a bed, but considers that incorrigible inebriates should be detained under conditions no less favourable than is the case with lunatics. Exception is also taken to a paragraph in the Departmental Committee's report in which the elaboration of fittings and ornamentation of certain public asylums for the insane is described, for it is pointed out that this description has no justifiable reference to Farmfield, although the context suggests that

[1] Archives de Médecine Militaire, November, 1908, p. 397.

such conditions exist there under the London County Council's sanction. On the contrary, reference is made to the report of the Inspector of Inebriate Reformatories for the year 1901 who wrote of Farmfield after its enlargement, "The new buildings ..... may be considered a model for similar institutions." To sum up, the control committee strongly resents the accusations of extravagance to which the Departmental Committee's report has given rise and makes the following recommendation to the London County Council:—

That unfair comment with regard to the Farmfield reformatory is made in the report of the Departmental Committee on the working of the Inebriates Acts; that the attention of the Secretary of State for the Home Department and of Sir John Dickson-Poynder, Bart., the chairman of the Departmental Committee, be called to the matter; that they be asked to take the necessary steps for the amendment of the report of the Departmental Committee so as to secure that the Council's position in the matter shall be more clearly indicated; and that they be further asked, in the event of this course being impracticable, to take such action as will give similar publicity to the Council's views as has been the case with regard to those of the Departmental Committee on the subject.

In June of last year we had occasion to criticise the Council's action in terminating its arrangement whereby habitual London drunkards committed from the police courts were received into the certified reformatories of the National Institution for Inebriates, thereby severely restricting the operation of the Inebriates Act of 1898. As the motive of this retrograde step was probably a desire to save the rates at the expense of the taxes—for the only alternative to the reformatory for habitual drunkenness is the prison—we can understand that the Council feels galled at an accusation of extravagance in administering the Act in question. Whilst sympathising with its situation we cannot agree that the new reformatories should be modelled entirely on public lunatic asylums. There has been regrettable extravagance in the erection of many of those institutions for which there can be no excuse in houses of correction for inebriates.

CINNAMATE OF SODIUM IN TUBERCULOSIS.

IN 1890 Dr. Landerer, a hospital surgeon of Stuttgart, stated that he had obtained remarkable results from cinnamic acid (one of the active principles of cinnamon) in the treatment of both surgical and pulmonary tuberculosis. Afterwards he used sodium cinnamate, which is more soluble. He gave intravenous injections not exceeding 25 milligrammes. His results appeared to be so good that he regarded the acid and its salts as almost a specific for tuberculosis. He described sections of the tissues showing cicatrisation obtained as a result of the injections. Subsequent researches have shown that cinnamate of sodium has the power of stimulating leucocytosis to which its curative properties appear to be due. It may be remembered that in searching for a palliative for inoperable cancer Dr. H. Lovell Drage, for this reason, used cinnamate of sodium and its allies.[1] At a meeting of the Académie de Médecine of Paris on Dec. 1st, 1908, M. Paul Reynier reported good results from cinnamate of sodium in surgical and pulmonary tuberculosis, and referred to similar results obtained by Spanish practitioners. One of these, Dr. Sancho Herrero, found that by Dr. Landerer's method he obtained only improvement but not cure. He therefore abandoned intravenous injection for subcutaneous or intramuscular injection by which he could give much larger doses of cinnamate of sodium—at first 3 centigrammes, then 10, 20, 60, and 70 centigrammes. He reported a number of cases of advanced tuberculosis cured by these large doses. Other Spanish physicians have reported similar results. Dr. José Codina Castellvi published in the *Revista de Medicina y Cirurgia Practica* a long paper in which he analysed the effects of cinnamate of sodium on the fever, cough, and sweats of tuberculosis, and concluded that the prolonged use of the injections ameliorated, and even cured, the pulmonary lesions of tuberculosis. In consequence of these reports M. Reynier gave subcutaneous injections of ten centigrammes of cinnamate of sodium every second day with results which surprised him. The following is an example. A jeweller, aged 25 years, was admitted into hospital on March 26th, 1906, suffering from vomiting and constipation. The abdomen was tympanitic and he had the abdominal facies. Laparotomy was performed but only dilated coils of intestine were found and the abdomen was closed. On the following days the patient's condition was so low that death was expected. On the third day after operation he passed flatus and after an enema a stool. Attention was then directed to his chest. He expectorated a large amount of nummular sputum. There were signs of consolidation and softening at the apices of the lungs. The temperature was 102·2° F. A diet of milk, eggs, and 100 grammes of raw meat daily was ordered. A liqueur glass of "iodine wine" (made by adding 100 grammes of glycerine and eight grammes of tincture of iodine to a litre of wine) was given daily. Every other day a subcutaneous injection of ten centigrammes of cinnamate of sodium in ten cubic centimetres of "physiological serum" was given. During the first month the patient lost weight and the fever continued but the cough diminished. After April 25th the fever ceased and he gained weight. On May 30th the cough had ceased. On June 15th he was discharged cured of his pulmonary lesions and weighing 65 kilogrammes (a gain of 18½ kilogrammes). Percussion showed some slight dulness but râles were no longer heard. He resumed his occupation. At the beginning of 1907 he had a relapse and recovered under the same treatment. M. Reynier reported several other similar cases. As to the mode of action of cinnamate of sodium, he suggests that this is partly explained by the leucocytosis which it produces and partly by some specific action on the bacillus or its toxins. Under the influence of the drug the number of bacilli in the sputum are first increased, as if the patient had acquired some expulsive power, then they gradually diminish and disappear concurrently with the expectoration. Possibly the cinnamate has, according to the ingenious hypothesis of Behring, the power of combining with the toxins of the tubercle bacillus and rendering them innocuous. It may be objected that the administration of raw meat and other measures were also adopted. M. Reynier states that without these measures the same results have been obtained by other observers but less rapidly. He recommends all the measures as complemental to one another.

[1] THE LANCET, Nov. 7th, 1908, p. 1367.

A NEW TRYPANOSOME.

IN November last Dr. J. Rose Bradford communicated to the Royal Society a Preliminary Note on the Occurrence of a New Variety of Trypanosomiasis on the Island of Zanzibar, by Dr. Alexander Edington, late director of the Bacteriological Institute for Cape Colony. It appears that while making a visit to the stables of the Sultan of Zanzibar an Indian veterinary surgeon drew Dr. Edington's attention to an "aged" Arab stallion which was suffering from fever, with swelling of the chest, legs, and abdomen, from which illness the animal ultimately died. In blood taken from this horse some very small trypanosomes were found of a size somewhat like that of the Trypanosoma dimorphon, but rather more delicate, and the blunt end frequently tapered to an abrupt point which was somewhat characteristic. A specimen slide sent to the Pasteur Institute, Paris, evoked from M. Mesnil the opinion that he concurred in the view that the trypanosome resembled in some points the Trypanosoma dimorphon, but that it was different in several

particulars, and also that it differed from the Trypanosoma congolense which M. Laveran considers as distinct from the Trypanosoma dimorphon. While at Zanzibar Dr. Edington injected several animals, including a horse, an ox, a goat, and some rabbits with blood from the infected stallion, all of which animals developed some illness, and from the blood of the horse, the ox, and the rabbits similar small trypanosomes were obtained. A donkey, too, was injected, but appeared to be immune. No other horse in the Sultan's stables was found to be infected. There are, it seems, few horses in Zanzibar, though donkeys and mules brought from the East are common, as also are cattle and goats obtained from the African mainland. Neither in Zanzibar nor in the adjacent island of Pemba does it appear that the occurrence of trypanosomiasis has been recorded or even suspected. The origin of the illness of the Sultan's stallion was not traced. There are, it is said, few blood-sucking flies other than mosquitoes on the island of Zanzibar, on which tsetse-flies have not been found. It will be interesting to learn if other observers meet with this new trypanosome now that attention has been called to it by Dr. Edington.

SCHOOL INSPECTION IN TASMANIA.

WE have received an interesting report to Parliament on the work of the medical branch of the Education Department of the Government of Tasmania compiled by Dr. J. S. C. Elkington, chief health officer of the island. The report deals with the result of 15 months' medical inspection of Tasmanian school children down to June 30th, 1908, and reveals as unsatisfactory a state of health amongst them as has been proved to be the case with any of our school children at home. The object of the inspection is at present frankly utilitarian and in the national interest rather than anthropological or psychological. The methods employed are described fully in an addendum report by Dr. Gertrude Halley who inspects all the schools in rural districts and of whose excellent work the chief health officer speaks in high terms. Mr. A. H. Clarke and Dr. G. H. Hogg also present reports upon the school children of Hobart and Launceston. Dr. Halley's visits are made unannounced, so that the children may be inspected in their normal state of cleanliness and clothing and the usual ventilation of the class-rooms may not be improved for the occasion. No treatment is undertaken but every effort is made to impress upon teachers and parents the urgent need for correcting the defects discovered, and upon their instruction and willing coöperation the success of the system largely rests, in the opinion of the authors of this report. The lethargy of some of the teachers concerning the children's health gives ground for comment, but that the inspecting medical officers have taken a libera view of their duties is shown by the account of the steps taken to awaken those responsible for the children's welfare at home and at school to a proper appreciation of its physical side. Turning to the statistics, we find that of 11,287 children examined 4158 individuals, or 36·83 per cent., were found to be defective to an extent which was either actively interfering with their educational progress or would in all probability so interfere with it in the near future. Slight defects were not recorded. The most widely spread troubles were adenoid growths and defective vision; no fewer than 2116, or 20·88 per cent., of all the children had imperfect sight, which in 973 cases was so severe as to interfere with education. 5687 children, or 56·1 per cent. of the total, were stated to have post-nasal adenoid growths, and of these 1956 were thereby hampered appreciably. The report does not state whether the former figure was based on digital examination, but even the latter, in which the presence of adenoids was undoubted, is much too high. 952, or 9·39 per cent., of the children were deaf to an extent interfering with educational progress, and 71 were mentally deficient so as to be incapable of benefiting by ordinary teaching methods. Cases of nervous disease were unusual but the other pathological conditions noted are much the same as is usual in similar English reports. It is gratifying to note that there has been a marked improvement in the general appearance of the children since medical inspection was instituted and that the children take kindly to the visits and performances of the "school doctor" in Tasmania.

THE STANDARDISATION OF DISINFECTANTS.

WE publish in another column a letter from Mr. M. Wynter Blyth who says: "As I read the letters which have appeared in THE LANCET, no one is seriously attacking the 'Rideal-Walker test' as a test; all that is being asked for is some board of reference or some research by independent men, &c." Mr. Wynter Blyth here exactly describes our intention in opening up the question in our columns, and we think that this is a good opportunity to say that at the very beginning of the discussion we took steps to set on foot the independent research which we consider necessary to clear the present clouded atmosphere. We have made arrangements for a report to us upon the whole question by certain gentlemen of undeniable scientific standing, having no connexion, direct or indirect, with the commercial side of disinfectants. The terms of reference which we have submitted to them are such that it is impossible for even a preliminary report to appear immediately, but we recognise the urgency of the matter and we know that our commissioners do the same. We are glad to see in the meantime that the *British Medical Journal* has reproduced in its columns certain of the conclusions arrived at in a valuable research contributed to the *Journal of Hygiene* in January of last year by Miss Hariette Chick. The experiments of the author were carried on at the Lister Institute under the direction of Dr. C. J. Martin, and in a later paper by Dr. Martin and Miss Chick[1] suggestive information is given with regard to determining the germicidal value of various types of disinfectants. Our readers are recommended to master these excellent papers.

OSTEOPLASTIC OPERATION FOR TRACHEAL STENOSIS.

OUR correspondent in Vienna writes that at a recent meeting of the Vienna Gesellschaft der Aerzte Dr. Moszkowicz showed a woman, 37 years old, on whom he had performed a very interesting operation. The patient had had a tracheotomy done when she was three years old. The cannula was worn until the age of 10. A fistula remained after the final removal of the cannula until she reached the age of 15 years. Its closure was followed by the development of a tracheal stenosis, for which continuous dilatation by bougies from her twentieth till the thirtieth year proved quite ineffectual. An operation for resection of the stenosed part, with reimplantation of a cannula was performed last year, but the patient's symptoms were not relieved, and a removal of the cannula was not tolerated. Dr. Moszkowicz then operated once more, using the skin of the tracheal region to enlarge the tracheal canal. An incision was made down to the trachea. Parallel with the median tracheal incision another incision was made on each side of the trachea in the skin of the neck, and thus a flap of skin in connexion with the trachea was prepared and rolled inwards. An epithelial tube was thus obtained. In order to do away with the danger of such a collapsable

[1] Journal of Hygiene, Vol. viii., No. 5, Nov., 1908.

channel, which on several occasions had threatened the patient with asphyxia, an additional operation was done. The trachea was split vertically, and both margins were then attached to the sternocleidomastoid muscle, which was freed by incision at the same time. This gave the trachea a good lateral support. In order to cover the large anterior gap, a flap of skin, periosteum, and bone taken from the sternum was implanted so that the epithelial surface faced the trachea, the raw surface being outwards, and the skin was sutured over it. The patient can now breathe very well through her new trachea, without stridor, and has not again been threatened with asphyxia. The transplanted bone is easily palpable under the skin of the neck and the x rays show it equally well. A similar method has been employed several times in urethroplasty for urethral stricture, no bone flap, of course, being used.

THE PARASITE OF KALA AZAR.

FOR many years kala azar in India defied all attempts to elucidate its etiology, and as it came to be regarded merely as a manifestation of "malarial cachexia" very little was done to grapple with it except by anti-malarial measures which proved quite valueless. But the new light which Leishman threw upon the nature of the malady by his discovery of the protozoal parasite with which his name and that of Donovan have been associated, completely altered the position, and soon a number of earnest Anglo-Indian workers were engaged in investigations upon the disease. Among those who have greatly contributed to the advance in knowledge of kala azar the name of Rogers stands out prominently. More recently Captain W. S. Patton, I.M.S., was charged by the Indian Government with the special duty of investigating the development of the Leishman-Donovan parasite, and his reports have been published from time to time in the Scientific Memoirs of the Officers of the Medical and Sanitary Departments of the Government of India. Captain Patton's last official report dealt with the association of the disease with the blood-sucking Indian bed bug, *Cimex rotundatus*, which had been suspected by Rogers to be the transmitter of the malady to man. In a recent issue of the German journal *Archiv für Protistenkunde*, Captain Patton published an article on another similar parasite found in the intestinal tract of the Lygaeid bug, the structure and life cycle of this parasite being almost identical with those of the Leishman-Donovan body; and in January of the present year he read a paper in London before the Society of Tropical Medicine and Hygiene, published in THE LANCET of Jan. 30th, in which he gave the gist of his own research work and summarised our knowledge of the parasite of kala azar. From this paper it appears that after due consideration of the many difficulties which have hitherto surrounded the classification of the parasite, he has arrived at the conclusion, adopting a suggestion formerly put forward by Rogers, that the kala azar parasite is a herpetomonad and should in future be known as *Herpetomonas donovani*. Its life cycle is made up of three stages—pre-flagellate, flagellate, and post-flagellate. The flagellate stage is found in the midgut of the Indian bed bug, the post-flagellate in the rectum of the adult host, where the parasites become encysted and are finally passed out in the fæces and are liable to be ingested by the larvæ or nymphs of the insect. In blood-sucking insects like the bug infected with these flagellates the cysts are not ingested by the adults, since these feed exclusively on blood. It is conjectured that the parasite, in order to reach man, must revert to its non-flagellate stage and that this change is most likely to take place somewhere in the neighbourhood of the biting part of the bug. It has been proved that Indian bed bugs become infected by feeding on the blood of kala azar patients, and though further experiments on animals may be necessary to prove the precise way in which an infected bug infects a healthy human subject there can, we think, be little doubt as to its ability to do so. These investigations do not seem to us to have received in this country the recognition which, in our opinion, they merit; but it is a matter for congratulation that through them it has been already possible to apply appropriate preventive measures for stopping the spread of the disease. We hear from India that very promising results have followed the burning down of bug-infested hovels and the removal of populations from infected villages to fresh sites free from any trace of the bloodthirsty Indian bed bug. By the scientific work of the experts whom we have named above much of the protracted suffering from "black sickness" has already been prevented and many lives have in consequence been saved.

THE RESEARCH DEFENCE SOCIETY.

THE letter from Mr. Stephen Paget which appears at p. 421 of our present issue gives an interesting account of the progress of this society. Commencing with a membership of seven (a number which has a history of beneficence as old as this world) it has now reached a membership of over 2000. At the inaugural meeting, an account of the proceedings of which we published in THE LANCET of June 27th, 1908, Lord Cromer was in the chair and Sir Thomas Barlow, Mr. Walter Long (to whom this country owes the practical extinction of hydrophobia), Lord Robert Cecil, and Mr. H. T. Butlin spoke, and it is greatly owing to the dignified advocacy of those speakers that the society has grown as it has done. Mr. Paget gives a list of pamphlets and other literature issued by the society. These pamphlets put forth in plain language the benefits which have accrued to mankind as the results of experiments on animals. The wonderful diminution in both the incidence of, and the mortality from, diphtheria, yellow fever, malaria, and Malta fever since the discovery of antitoxin, the transmitting mosquito agent, and the micrococcus Melitensis is known to all our readers and must convince any sensible layman who is open to conviction. As to those honest, if wrong-headed, persons who believe that no human life should be bought by an experiment upon an animal we can only leave them to time for cure. It is the antivivisectionist who suppresses facts, who distorts knowledge, and who is wholly inconsistent to whom a perusal of the Research Defence Society's literature may be recommended. Some of them are clever men and women who, whatever they may do as an organised society, would, we are sure, as individuals not wish to be either dishonest or ignorant. The Research Defence Society is doing a good work and deserves public and medical support.

THE RETARDING INFLUENCE OF SODIUM BICARBONATE ON PANCREATIN.

PEPTONISING powders are used to a large extent for predigesting milk in cases where difficulty is experienced in digesting cow's milk. They are usually composed of one part of pancreatin mixed with four parts of sodium bicarbonate with or without the addition of sugar of milk. It has recently been shown by Mr. C. E. Vanderkleed and Mr. L. H. Bernegan [1] that these proportions are unsuitable owing to the retarding influence of excessive quantities of sodium bicarbonate on the amylolytic power of pancreatin. They prepared mixtures of these substances in various proportions, containing from 20 to 80 per cent.

[1] Druggists Circular, January, 1909, p. 16.

of sodium bicarbonate, and determined the amount of the mixture required to convert 7·5 grammes of starch. The results showed that the presence of sodium bicarbonate in greater proportions than one-third reduces the amylolytic power of the pancreatin. In cases where an excess of sodium bicarbonate was used it was found that the full activity of the pancreatin could be restored by neutralising the excess of alkali. In accordance with these results they suggest the following improved formula for peptonising powders: pancreatin 20 parts, sodium bicarbonate 10 parts, and sugar of milk 70 parts. The sugar of milk is added as a diluent to facilitate the measurement of the powder and on account of its dietetic value. About 30 grains of this powder are sufficient completely to peptonise one pint of milk in 30 minutes at a temperature of 150° F. As it is generally supposed that small amounts of alkalies are helpful, rather than otherwise, to the activity of pancreatin, it is important to know whether an excess reduces the activity of the powder. Before the suggestion to reduce the amount of sodium bicarbonate is adopted it would be desirable to ascertain whether the excess of alkali may not serve a useful part in neutralising the acid contents of the stomach.

FERRO-SILICON.

THE January number of the *Journal of the Royal Institute of Public Health* contains an interesting report on the gaseous emanations of ferro-silicon founded upon the recent deaths of Russian emigrants from inhaling the gases given off by this substance which was part of the cargo on board ship. Biological experiments proved that ferro-silicon when moist readily evolves gases which are very poisonous. Ferro-silicon is described as a coarse metallic powder which is manufactured by heating a mixture of iron ore, quartz, coke, and lime in an electric furnace, and is used by steel makers as a convenient method of contributing silicon to certain grades of steel. As long as it is dry ferro-silicon appears to be harmless, but when moistened it evolves chiefly phosphuretted hydrogen and possibly some arsenuretted hydrogen and acetylene by virtue of the action of water on the phosphides, arsenides, and carbides present. Phosphuretted hydrogen is stated to be so poisonous that air containing 0·02 per cent. of the gas is fatal to small animals within half an hour. The inquiry is being continued under the direction of Professor William R. Smith who receives the assistance of Dr. Hermann Dodd in regard to pathological questions and of Dr. Charles E. Harris in regard to chemical questions.

SURGICAL CONGRESSES IN BERLIN.

DURING the week which commences on Easter Sunday, April 11th, three congresses will be held in Langenbeck House, Ziegelstrasse, Berlin. At that of the German Society of Orthopædic Surgery which will meet on April 13th it is intended to submit for discussion 12 questions relative to congenital dislocation of the hip-joint. Of these questions three have reference to the relations between this condition and congenital coxa vara or acquired coxa valga, three deal with the methods of reduction and retention in the new position, and two are devoted to the bloodless method of reduction. A number of preparations of congenital dislocations of the hip-joint will be exhibited. Communications relative to papers or preparations should be addressed to Professor Dr. Joachimsthal, Berlin W., Genthinerstrasse 16. The Congress of the German Surgical Society will be opened at 10 A.M. on April 14th and will continue until the 17th. Members paying their annual subscriptions to Dr. Melzer at Langenbeck House up to April 6th will receive their membership tickets by post. Tickets will also be issued at Langenbeck House on April 13th and 14th. Applications relative to papers or demonstrations should be sent not later than March 5th to the president of the Congress, Dr. H. Kümmell, Hamburg 21, Am Langenzug 9. A programme of official routine business is already announced. Some particulars relative to the papers to be brought before the Congress will be issued about four weeks before the meeting. The papers and demonstrations will probably be limited to about 70. Communications made to the Congress must not be read from written or printed copies unless special permission has been previously obtained. The time limits are 15 minutes for each speaker introducing a subject and five minutes for each speaker in a discussion. The secretary of the Congress is Dr. Körte, Berlin W. 62, Kurfürstenstrasse 114. The Congress of the German Röntgen Society will commence at 9 A.M. on April 18th. The secretary is Dr. Immelmann, Berlin W. 35, Lützowstrasse 72, to whom intimations of papers and demonstrations should be sent not later than March 5th. The president of the Congress is Dr. Paul Krause.

AT a meeting of the Clinical Section of the Royal Society of Medicine on Friday next, Feb. 12th, to commence at 8 P.M., Mr. H. T. Butlin will exhibit at 8.30 P.M. his collection of drawings of early carcinoma of the tongue and of conditions which may be mistaken for it, and will speak of the results of operations which have been practised in the cases exhibited. Microscopic sections of the cases will be on view. Mr. A. E. J. Barker, Mr. W. G. Spencer, and Mr. G. L. Cheatle will discuss the subject.

THE Hunterian Oration of the Royal College of Surgeons of England will be delivered in the theatre of the College by Mr. Henry Morris, the President, on Monday, Feb. 15th, at 4 P.M. Fellows and Members of the College who desire to be present are asked to apply for tickets to the secretary, Mr. S. Forrest Cowell.

Professor Dieudonné, who went to India in 1897 to investigate the plague epidemic as a member of Professor Robert Koch's commission, has been appointed "Referent"—that is to say, chief of the department of public health in Bavaria—in succession to Dr. von Grashey who is retiring at the age of 70 years.

THE annual oration before the Hunterian Society will be delivered by Dr. W. Rawes on Wednesday, Feb. 10th, at 8.30 P.M., in the theatre of the London Institution, Finsbury Circus. The title is "Psychiatry: A Retrospect." All members of the medical profession are invited.

WE again remind our readers of the meeting of the British Medical Benevolent Fund to be held on Tuesday, Feb. 9th, in the library of the Royal College of Physicians of London at 5 P.M. Sir John Tweedy will be in the chair.

THE discussion on Ulcerative Colitis at the Medical Section of the Royal Society of Medicine has been adjourned until Wednesday, Feb. 10th, at 5.30 P.M. The discussion will be continued by Sir Patrick Manson.

THE anniversary dinner of the Medical Society of London will be held at the Whitehall Rooms on Wednesday, March 10th, at 7.30.

Dr. Ramon y Cajal, the eminent Madrid anatomist, has been appointed a Senator of the Kingdom of Spain.

ANNUAL REPORT FOR 1907 OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

III.[1]

CONTINUING his account of epidemic prevalence in the metropolis Sir Shirley F. Murphy reports that during the year 1907 there were no deaths from typhus fever and only three cases of that disease within the administrative county. Practically the same is true of each of the three preceding years. Within the memory of several medical men still in practice there were in the central districts of London certain areas that were well-known "fever dens," where in the days of vestry government typhus fever was permitted to spread virtually unchecked to the great distress of the squalid inhabitants and to the imminent danger of the medical men and nurses engaged in their attendance. We learn from this report that so recently as 1871–80 the typhus fever death-rate in London amounted to 55 in each 1,000,000 of the entire population. What the rate was in unhealthy areas like the district of St. Giles's, we are not informed, but it must have been enormous. The circumstance that typhus fever is now practically non-existent in these areas is obviously due to the well-directed and munificent initiative of the great Lord Shaftesbury, through whose instrumentality some of the densest fever dens of central London were demolished. The clearing and rebuilding of other similar areas has been effected under the direction of the County Council, so that the densest parts of central London now contain relatively few of the plague-spots which 20 years ago were prolific breeding grounds for typhus fever.

During the last three years the incidence of sickness from enteric fever on the London population has been less than in any other year on record and has averaged only 3 in each 100,000 living, whilst in the year 1907 the mortality from that disease has been lower than in any year since 1871–80. The incidence of enteric fever on age and sex in 1907 was similar to that of previous years; the figures for one year are insufficient to form a safe basis for the calculation of rates at groups of ages, but we learn that, speaking generally, the greatest incidence of attack is upon males from 20 to 25 years of age and upon females from 10 to 15, whilst the greatest incidence of death is upon males aged 20–55 and upon females aged 25–35. As has been noted in previous years, the seasonal distribution of enteric fever corresponds closely to that of epidemic diarrhœa. Only a few of the district health officers give account of groups of cases of enteric fever attributable to a common cause. In some of these the consumption of a particular article of food about a fortnight before the onset of illness is mentioned as a possible cause. Out of 513 cases of the disease occurring in districts the reports for which give the necessary particulars the number of cases regarded as possibly due to food was as follows: mussels, 16 cases; oysters, 14; periwinkles, 6; cockles, 4; unspecified shell-fish, 31; fried fish, 14; watercress, 6; and ice-cream, 6.

The proportion of cases associated with the taking of food of all descriptions amounted to about one-fifth of the total cases recorded. In other reports illness from enteric fever is attributed to infection from person to person. But the difficulty of determining the extent to which personal infection prevails in London is considerable, because the widely varying intervals that may elapse before the onset of definite symptoms may readily obscure the existence in a group of cases of such a common cause as food infection. Many of the London sanitary authorities give opportunities for the gratuitous application of the Widal test to the diagnosis of enteric fever. Some of the reports give the number of examinations thus made at the public cost. From these it appears that out of 393 instances in which this test has been used a positive result was obtained in 127 instances, or 33 per cent.

The low summer temperature of 1907 must be regarded as largely contributory to the diminished mortality from diarrhœal diseases in that year. Only half of the deaths from these maladies were returned under the authorised name "infective enteritis," the remainder being referred to "diarrhœa" simply. According to the report of Dr. S. Davies, medical officer of health of Woolwich, the sanitary authorities of that borough are taking steps to deal preventively with diarrhœal diseases, we presume, mainly as they affect young children. During the summer quarters of the years 1905-06-07 a system of notification of "zymotic (infective) enteritis"—i.e., epidemic diarrhœa—has been in vogue in Woolwich, and the notifications have been followed up by the visitation of the homes of the patients by a female isanitary nspector. We are not informed as to the details of this work but Dr. Davies mentions that in recent years there has been a marked decrease in the loss of life by diarrhœa.

In the section of his report which treats of the behaviour of pulmonary tuberculosis in London Sir Shirley Murphy has some remarks which are deserving of more than passing notice. The fall in mortality from this disease noticed in recent previous reports has been maintained throughout the year 1907, the metropolitan death-rate being now only half of what it was 50 years ago. In this respect the statistics of London do not differ from those of England and Wales in the aggregate, although they differ widely from those of Ireland, in which division of the kingdom the death-rate seems to have increased almost steadily since 1871–80.

In this connexion Sir Shirley Murphy gives prominence to the circumstance that Ireland has maintained not only its high death-rate from tuberculous phthisis but also its high death-rate from causes other than this. As far as the figures can be trusted tuberculous phthisis has in this respect behaved in Ireland as it does in England—i.e., the mortality from that disease corresponds to the mortality from all causes less tuberculous phthisis. He thinks that, in seeking explanation of the maintenance of phthisis mortality in Ireland and of its concurrent decline in England, the behaviour in the two countries of mortality from all other causes must be taken into consideration. There is indeed reason for thinking that improvement in the social circumstances of the English people has been the material cause of an increased resistance to disease generally, this being specially conspicuous in the decline of the phthisis death-rate.

The usual tables are inserted showing the close relationship still existing between "social conditions," as expressed by "overcrowding," and mortality from this disease. From these tables it is clear that in the most overcrowded districts of the metropolis the death-rate from tuberculous phthisis is approximately twice that in the districts which are least overcrowded. In reviewing the particular circumstances that have been associated in London with the decline in the mortality from this disease in recent years Sir Shirley Murphy criticises the attempts now current to derive therefrom indications for administrative effort of a kind likely to accelerate that decline in the near future. "The fact," he urges, "which first claims recognition, and which stands in the forefront of all considerations of the question, is that this diminution has occurred without any effort being specially directed to the attainment of this end." It is well known that in London, as elsewhere, the decline in the mortality from tuberculosis has been more rapid in females than in males, and that what we call "urbanisation" affects the male sex in a greater degree than the female, for the tendency in recent years has been for the increase of indoor employment to be greater among men than among women. It is also worthy of mention that improvement in the dwellings of the workers began at an earlier date than did improvement in the workshops. Probably both factors have coöperated to produce this result. Nevertheless, the broad fact remains that both sexes have participated in the general social improvement, in which not only the dwelling and the workshop but also the food of the workers and their families must have shared. Whether this improvement has rendered the population more resistant to a contagium of constant virulence or whether the virulence of tuberculous contagion has itself declined must be matter for speculation, but there is good reason for framing a working hypothesis on the known fact that the power of resistance is an important factor in determining the liability to attack from a widely distributed infection. Sir Shirley Murphy evidently hesitates to adopt the view that the decline in the death-rate from pulmonary tuberculosis would be materially accelerated by the more extended

[1] Nos. I. and II. were published in THE LANCET of Jan. 16th (p. 187) and 23rd (p. 266), 1909, respectively.

use of institutional treatment, but he speaks approvingly of the suggestion that a system should become general by which knowledge of the existence of cases of the disease should be supplied to the medical officer of health. There is no evidence that compulsory notification, as contrasted with voluntary notification of the disease, has led to better results, but the report contains interesting particulars of the progress of voluntary notification in those metropolitan boroughs in which that system has been adopted.

It is satisfactory to note that the London County Council is giving effect to the recommendation of the Royal Commission on Tuberculosis, which in its second interim report urged the necessity for the adoption of more stringent measures than those at present enforced to prevent the sale of tuberculous cows' milk for human consumption; for, in the words of the Commissioners, "there can be no doubt that in the majority of these cases" (tuberculosis in children) "the bacillus is introduced through cows' milk. ..... Cows' milk, containing bovine tubercle bacilli, is clearly a cause of tuberculosis and of fatal tuberculosis in man." In this connexion Sir Shirley Murphy reports that since the date of the Dairies Order of 1899 the cows in the London cowsheds have been periodically inspected by the Council's veterinary inspector, with a view to the detection and segregation of cows suffering from tuberculous disease of the udder. In the course of the year 1907 there were five inspections of all the cows (from 3000 to 4000 in number) in the London cowsheds, and a summary of the results is given in the report.

With respect to cancer prevalence in London during 1907 the most interesting circumstance recorded in the report is that there has been a slight decrease in the deaths from this malady, as compared with the previous year. The usual tables are reproduced, showing the incidence of fatal cases of malignant disease on age, sex, and locality; and in commenting on the prevalence of cancer in the homes of the working classes—i.e., in tenements of fewer than five rooms—Sir Shirley Murphy states that the figures for 1907 indicate no relation whatever between cancer mortality and social condition, as judged by degrees of overcrowding; and that in this respect the behaviour of cancer differs entirely from that of tuberculous phthisis already referred to in his report.

The subject of epidemic cerebro-spinal meningitis (cerebro-spinal fever) occupied the attention of the County Council's medical staff since the beginning of 1907, in consequence of the exceptional prevalence of that disease in Glasgow and in Belfast. Nothing approaching epidemic proportion has characterised the disease as it has hitherto been observed in the metropolis. Nevertheless, in anticipation of possible increase in the number of deaths from this disease, and of the further possibility that an increase in the number of attacks may occur without immediately affecting the death returns, the County Council wisely decided to declare cerebro-spinal fever a temporarily notifiable disease, and it has been treated as such since February, 1907. In deciding what conditions should be included under this heading considerable administrative difficulty was encountered, and in this dilemma the aid of the Royal College of Physicians of London was invoked—a copy of the recommendations of which body is reproduced in the report. It goes without saying that, under Sir Shirley Murphy's advice, the County Council adopted the recommendations of the College, making an order for the extension of notification for a further period of 18 months, so as to include two epidemic periods in which the disease might be satisfactorily studied. In its communication to medical practitioners informing them of its order the Council stated that, as recommended by the Royal College of Physicians, the disease known as posterior basal meningitis should be included, for notification purposes, in the term "cerebro-spinal fever," but that the term was not to be interpreted as including cases of accident or cases of meningitis due to tuberculosis, or to syphilis, or to middle-ear disease. It is interesting to note that although in 1907 in Glasgow, the population of which city is less than one-sixth of that of London, there were notified nearly 1000 cases of this disease, with a fatality of 85 per cent., the reported cases in the whole of London did not exceed 135, with a fatality of only 18 per cent. The London cases have been carefully studied by Mr. W. M. Wanklyn who has contributed an able report of his investigations, which Sir Shirley Murphy has appended to his own report.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMITIA was held on Jan. 28th, Sir R. DOUGLAS POWELL, Bart., K.C.V.O., the President, being in the chair.

The following gentlemen having passed the requisite examinations were admitted Members of the College: George Augustus Auden, M.D. Camb., L.R.C.P.; Francis William Clark, M.D. Durh., L.R.C.P.; John Frederick Halls Dally, M.D. Camb., L.R.C.P.; Robert McCarrison, M.B. Roy. Univ. Irel., Captain I.M.S.; Edward Fretson Skinner, M.B. Camb., L.R.C.P.; Arthur Lionel Hall Smith, M.B. Camb., L.R.C.P.; and James Aubrey Torrens, M.B. Lond., L.R.C.P.

Licences to practise physic were granted to 81 gentlemen who had passed the requisite examinations.

Diplomas in Public Health were granted jointly with the Royal College of Surgeons of England to the following gentlemen:—Alfred Ball, M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S. Eng.; Robert James Bethune, M.D., B.Ch. R.U.I.; Arthur Burnell Carter, L.R.C.P. Lond., M.R.C.S. Eng.; Bertram Walter Cherrett, M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S. Eng.; James Clark, M.D., Ch.B. Aberd., M.R.C.P. Lond.; James Alfred Patrick Cullen, M.B. Lond., L.R.C.P. Lond., M.R.C.S. Eng.; Leonard Fabian Hirst, M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S. Eng.; Duncan Matheson Johnston, L.R.C.P. Lond., M.R.C.S. Eng.; Andrew Alexander McWhan, M.B., Ch.B. Glasg.; Frederick Septimus Penny, M.B. Lond., L.R.C.P. Lond., M.R.C.S. Eng. (Captain R.A.M.C.); Norman Hamilton Walker, M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S. Eng.; Arthur Harold Wilson, L.R.C.P. & S. Edin., L.F.P. & S. Glasg.; and Subrahmanyam Yenamandram, L.M. & S. Madras.

The PRESIDENT announced that he had appointed Dr. G. H. Savage Harveian orator for 1909 and Dr. J. A. Lindsay Bradshaw lecturer for the same year, also that the Council had appointed Mr. A. G. R. Foulerton, F.R.C.S., Milroy lecturer for 1910.

The following communications were received: 1. From the Secretary of the Royal College of Surgeons of England reporting proceedings of its Council on Jan. 14th. 2. From the Home Office inclosing for the information of the College a letter from the organising committee of a proposed international congress for improving the condition of the blind to be held in Naples from March 30th to April 3rd, 1909. 3. From the Dean of the Faculty of Medicine, University of Edinburgh, proposing the third week of June as the date of the next examination for the Murchison scholarship to be held in Edinburgh this year. The proposal was accepted. 4. From the Rector of the University of Geneva inviting the College to send a representative to join in their commemoration of the 350th anniversary of their foundation and of the 400th anniversary of the birth of Calvin, their founder, to be held in Geneva from July 7th to 10th, 1909. The invitation was accepted and it was left to the President to nominate a delegate.

Sir William H. Allchin, Dr. Sidney P. Phillips, Dr. W. Pasteur, Dr. Sidney H. C. Martin, and Dr. A. E. Garrod were elected councillors.

Dr. F. H. Champneys was re-elected a representative of the College on the Central Midwives Board for one year from April 1st next.

Dr. C. Theodore Williams was re-elected a representative of the College on the Court of Governors of the University of Birmingham.

The quarterly report of the College finance committee, dated Jan. 14th, was received and adopted.

A report from the committee of management, dated Dec. 18th, 1908, was received and adopted. It gave the following particulars: 1. The following institutions, which had been visited by members of the committee and reported upon as fulfilling the requirements of the Board, were added to the list of institutions recognised by the Examining Board in England for instruction in chemistry and physics: Whitgift School, Croydon; and King's College School, Wimbledon. 2. The Municipal Technical Institute, Portsmouth, which had been already recognised for the courses of instruction in chemistry and physics, was also recognised for instruction in biology. 3. The Medico-Chirurgical College, Philadelphia, United States, was added to the list

of institutions at which the curriculum of professional study required for the diplomas of the Royal Colleges might be pursued, and the graduates of which might be admitted to the final examination of the Examining Board in England on production of the required certificates of study.

After some further formal business the PRESIDENT dissolved the Comitia.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Feb. 5th, 1831.

SPONTANEOUS COMBUSTION OF FINELY-DIVIDED CHARCOAL. CAUTION TO GUNPOWDER MANUFACTURERS.

IN the last number of the *Annales de Chimie, &c.* which has arrived in this country, we find a paper on this singular subject by M. Aubert, colonel of artillery. He details the several circumstances of the spontaneous combustion of charcoal, which took place in the powder mills at Metz, in 1828; and he also gives an account of the experiments instituted in order to investigate the nature of the occurrence. The following are the results of the inquiry:—

Charcoal in the state of minute division, to which it is reduced by trituration on a large scale, assumes the appearance of a thick unctuous liquid, and in this condition it occupies considerably less space than it does in the undivided state; it also absorbs air with much greater rapidity. This absorption is accompanied by an intense disengagement of heat, which must be regarded as the true cause of the spontaneous combustion. The combustion often takes place within twenty-four hours after the trituration, and commences towards the centre of the mass of charcoal. The variations of the thermometer, barometer, or hygrometer have no apparent influence over the occurrence. The charcoal most readily affected in this manner is prepared by distillation, and in order that the spontaneous inflammation should happen, it is necessary that there should be at least 30 lbs. weight of charcoal together. The combustion usually occurs the more certainly in proportion to the shortness of the time between the carbonization of the wood and trituration of the charcoal. Free access of air is essentially necessary. During the trituration, the air in the apparatus undergoes no change, neither is air decomposed till the combustion commences. Sulphur and saltpetre added to the charcoal, prevent the spontaneous combustion, though the temperature of the charcoal, nevertheless, experiences a marked elevation; but though this increase is not very great, M. Aubert considers it dangerous to leave these mixtures exposed to the air in large masses after trituration.

VITAL STATISTICS.

VITAL STATISTICS FOR 1908.

THE following are the provisional figures showing the birth-rates and death-rates in England and Wales in the year 1908:—

—	Annual rate per 1000 living.				Deaths under one year to 1000 births.
	Births.	Deaths.		Principal epidemic diseases.	
		Crude.	Corrected.*		
England and Wales	26·5	14·7	14·7	1·29	121
76 great towns ...	27·0	14·9	15·8	1·59	128
142 smaller towns	26·0	14·0	14·7	1·26	124
England and Wales less the 218 towns	26·2	14·7	13·8	0·99	110

* The corrected death-rates are the rates which would have been recorded had the sex and age constitution of the populations of the several areas been identical with that of England and Wales as enumerated in 1901.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7657 births and 5665 deaths were registered during the week ending Jan. 30th. The annual rate of mortality in these towns, which had been equal to 16·6 and 15·7 per 1000 in the two preceding weeks, rose to 18·0 in the week under notice under the influence of low temperature and general fog. During the first four weeks of the current quarter the annual death-rate in these towns averaged 17·0 per 1000, and in London the mean rate during the same period was also equal to 17·0. The lowest recorded annual death-rates in these towns during the week were 5·2 in Handsworth, 6·8 in Willesden, 8·0 East Ham, and 9·3 in Hornsey, all being suburban districts; the rates in the other towns ranged upwards, however, to 24·2 in Wigan, 26·4 in Huddersfield and in Bury, and 30·8 in Swansea. In London the recorded death-rate during the week was equal to 17·8 per 1000. The 5665 deaths from all causes in the 76 towns last week showed an increase of 701 upon the low number in the previous week, and included 483 which were referred to the principal epidemic diseases, against 491 and 447 in the two preceding weeks; of these 483 deaths, 217 resulted from measles, 94 from whooping-cough, 75 from diphtheria, 40 from diarrhœa, 30 from scarlet fever, and 27 from "fever" (principally enteric), but not one from small-pox. The deaths referred to these epidemic diseases in the week under notice were equal to an annual rate of 1·5 per 1000, against 1·6 and 1·4 in the two preceding weeks; in London the recorded rate from these diseases was equal to 1·6 per 1000. No death from any of these epidemic diseases was registered during last week in Rhondda, Preston, Walsall, Rochdale, or in ten other smaller towns; the annual death-rate therefrom, however, ranged upwards in the other towns to 4·0 in Rotherham, 4·3 in Warrington, 4·4 in Bury, and 5·9 in Middlesbrough. The fatal cases of measles in the 76 towns, which had been 229, 221, and 210 in the three preceding weeks, rose again to 217 in the week under notice, and caused annual death-rates equal to 2·3 in West Ham and in Sunderland, 2·4 in Rotherham, 2·6 in West Hartlepool, and 4·0 in Middlesbrough. The 94 deaths from whooping-cough showed a further increase of 38 upon the numbers returned in the three previous weeks; the highest annual rates during the week were 1·1 in St. Helens and Walthamstow, 1·2 in Wigan, 1·6 in Swansea, and 2·6 in Bury. The 75 fatal cases of diphtheria also exceeded the number in any recent week, and included 21 in London and its suburban districts and seven in Manchester and Salford; this disease, however, caused the highest proportional mortality in Merthyr Tydfil, Warrington, and Tynemouth. The 40 deaths attributed to diarrhœa were fewer than in any previous week since last autumn. The 30 fatal cases of scarlet fever also showed a further decline, but included three in Leicester, five in Liverpool, and four in Manchester. Of the 27 deaths referred to "fever," a lower number than in any recent week, eight were returned in Manchester and Salford and three in Sheffield. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had declined in the four preceding weeks from 3557 to 3211, had further fallen to 3201 at the end of the week under notice; the new cases of this disease admitted to these hospitals during the week under notice were 339, against 358 and 379 in the two preceding weeks. The registered deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 422, 379, and 317 in the three preceding weeks, rose again during the week under notice to 377, but were 62 below the corrected average number in the corresponding week of the five years 1904–08. The causes of 61, or 1·1 per cent., of the deaths registered in the 76 towns during the week were not certified, either by a registered medical practitioner or by a coroner. All the causes of death registered during the week under notice were again duly certified in London, Leeds, West Ham, Bradford, Bristol, Newcastle-on-Tyne, Salford, and in 41 other smaller towns; the 61 uncertified causes of death in the 76 towns last week included 12 in Liverpool, 10 in Birmingham, seven in Sheffield, and three both in Manchester and in Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 19·5, 18·1, and 18·8 per 1000 in the three preceding weeks, declined to

17·2 in the week ending Jan. 30th. During the first four weeks of the current quarter the annual death-rate in these eight towns averaged 18·4 per 1000, and exceeded by 1·4 the mean rate during the same period in the 76 large English towns. Among the eight Scotch towns the death-rate during the week under notice ranged from 11·6 and 11·7 in Leith and Perth to 18·0 in Glasgow and 18·5 in Dundee. The 616 deaths from all causes registered in the eight towns last week showed a decline of 55 from the number in the previous week, but included 71 which were referred to the principal epidemic diseases, against 73 and 57 in the two preceding weeks; of these 71 deaths, 34 resulted from whooping-cough, 18 from diarrhœa, ten from diphtheria, four from "fever," four from scarlet fever, and one from measles, but not one from small-pox. These 71 deaths were equal to an annual rate of 2·0 per 1000, exceeding by 0·5 the mean rate during the week from the same diseases in the 76 English towns. The 34 fatal cases of whooping-cough in the eight Scotch towns, which had been 39 and 35 in the two preceding weeks, further declined to 34 in the week under notice; they included 26 in Glasgow, five in Aberdeen, and three in Paisley. The 18 deaths attributed to diarrhœa exceeded by 11 the number in the previous week; nine were returned in Glasgow, three in Aberdeen, and two both in Edinburgh and in Greenock. The fatal cases of diphtheria, which had been seven and 12 in the two preceding weeks, declined again last week to 10, of which seven occurred in Glasgow, two in Aberdeen, and one in Edinburgh. Of the four deaths referred to "fever," three fatal cases of enteric were recorded in Glasgow and one of cerebro-spinal meningitis in Edinburgh. The four fatal cases of scarlet fever included two in Glasgow and one each in Edinburgh and Dundee. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 151 and 118 in the two preceding weeks, further declined last week to 111, and were 68 below the number returned in these towns in the corresponding week of last year. The causes of 11, or 1·8 per cent., of the deaths registered in the eight towns during the week were not certified; in the 76 large English towns the proportion of uncertified causes of death last week did not exceed 1·1 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 23·6, 23·7, and 25·3 per 1000 in the three preceding weeks, further rose to 25·4 in the week ending Jan. 30th. During the first four weeks of the current quarter the death-rate in the city averaged 24·5 per 1000, whereas the mean rate during the same period did not exceed 17·0 in London and 18·2 in Edinburgh. The 194 deaths of Dublin residents during the week under notice showed a further slight increase upon recent weekly numbers, and included 13 which were referred to the principal epidemic diseases, corresponding with the number in the previous week. These 13 deaths were equal to an annual rate of 1·7 per 1000; the rate from these epidemic diseases in the same week did not exceed 1·6 in London and 0·7 in Edinburgh. Of the 13 deaths from these epidemic diseases in Dublin last week six resulted from measles, two each from diphtheria, whooping-cough, and "fever," and one from diarrhœa, but not one either from scarlet fever or small-pox. The six fatal cases of measles showed a decline of three from the number in the previous week. The 194 deaths from all causes during the week included 38 of infants under one year of age and 63 of persons aged upwards of 60 years; the deaths of elderly persons showed a further increase upon recent weekly numbers. Eight inquest cases and six deaths from violence were registered during the week; and 84, or 43·3 per cent., of the deaths occurred in public institutions. The causes of nine, or 4·6 per cent., of the deaths registered in Dublin last week were not certified; the causes of all the 1653 deaths in London and of the 110 deaths in Edinburgh last week were duly certified.

ST. AGNES (CORNWALL) WATER-SUPPLY.—The Truro rural district council at its meeting held on Jan. 27th decided to apply to the Local Government Board for sanction to borrow £3500 for the water-supply of St. Agnes.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: W. G. K. Barnes to the *Clyde* and D. J. P. McNabb to R.M. Depôt, Deal. Surgeon: A. R. Fisher to the *Jupiter*.

ROYAL ARMY MEDICAL CORPS.

Colonel T. M. Corker, Principal Medical Officer, Scottish Command, has been granted leave of absence to April 13th, with permission to travel in France, Italy, and Switzerland. Lieutenant-Colonel J. Donaldson and Captain P. Eastan, on return from India, have been appointed to the Aldershot Command, and posted to the Cambridge Hospital for duty. Captain R. G. Painton has been posted to the Cambridge Hospital, Aldershot, for duty.

The undermentioned Captains to be Majors (dated Jan. 28th, 1909): Thomas H. M. Clarke, C.M.G., D.S.O., Edwin W. P. V. Marriott, Stevenson L. Cummins, Peter Mackessack, and Henry L. W. Norrington.

Lieutenant James A. Clark, from the Seconded List, to be Lieutenant (dated Jan. 29th, 1909).

INDIAN MEDICAL SERVICE.

The King has approved of the following promotion: Lieutenant to be Captain (dated Feb. 1st, 1908): William Haywood Hamilton (provisionally).

The King has also approved of the retirement of the following officers: Colonel Harry Beecham Briggs (dated Jan. 1st, 1909); and Lieutenant-Colonel Charles Monk (dated Nov. 25th, 1908).

SPECIAL RESERVE.

Royal Army Medical Corps.

Captain George Lane, from the late Royal Army Medical Corps (Militia), having assented to be transferred, is appointed an officer of the Special Reserve of Officers from the date stated, retaining the rank and seniority which he held while in the Militia (dated Sept. 20th, 1908).

TERRITORIAL FORCE.

Royal Garrison Artillery.

The Tynemouth: The undermentioned officers, from The Tynemouth Royal Garrison Artillery (Volunteers), are appointed to the unit, with rank and precedence as in the Volunteer Force (dated April 1st, 1908):—Surgeon-Major Hugh Ranson Bramwell and Surgeon-Captain John Cromie.

Royal Army Medical Corps.

Lieutenant William Lloyd resigns his commission (dated August 17th, 1908).

Captain Robert H. Henderson resigns his commission (dated Dec. 11th, 1908).

For attachment to Units other than Medical Units.—Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel Robert de la Pole Beresford, from the 2nd Volunteer Battalion, The King's (Shropshire Light Infantry), to be Lieutenant-Colonel with the honorary rank of Surgeon-Colonel, with precedence as in the Volunteer Force (dated April 1st, 1908). Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel William Packer, from the 1st Volunteer Battalion, The King's (Shropshire Light Infantry), to be Lieutenant-Colonel with the honorary rank of Surgeon-Colonel, with precedence as in the Volunteer Force (dated April 1st, 1908). Lieutenant-Colonel Charles Downing, from the Welsh Bearer Company, Royal Army Medical Corps (Volunteers), to be Lieutenant-Colonel, with precedence as in the Volunteer Force (dated April 1st, 1908). Surgeon-Lieutenant William Douglas Watson, from the 1st Essex Royal Garrison Artillery (Volunteers), to be Lieutenant, with precedence as in the Volunteer Force (dated April 1st, 1908). Surgeon-Lieutenant Edward Tenison Collins, from the 2nd Glamorgan Royal Garrison Artillery (Volunteers), to be Lieutenant, with precedence as in the Volunteer Force (dated April 1st, 1908). Captain George C. Cathcart resigns his commission (dated Dec. 16th, 1908). Lieutenant Edward T. Collins to be Captain (Dec. 23rd, 1908).

3rd East Anglian Field Ambulance: Frederick John Rees to be Lieutenant (dated July 13th, 1908).

4th Northern General Hospital: The undermentioned to be officers whose services will be available on mobilisation (dated Feb. 3rd, 1909):—To be Captains: Edward Stuart

Winter, William Robert Higgins, and George Leslie Howard Revill.

Highland Mounted Brigade Field Ambulance: Major John Macdonald to be Lieutenant-Colonel (dated Dec. 24th, 1908).

3rd Highland Field Ambulance: Captain William Edward Foggie, from the Royal Army Medical Corps, Territorial Force, to be Captain, with seniority from Jan. 29th, 1902 (dated April 1st, 1908).

3rd West Lancashire Field Ambulance: Major Robert Jackson, from the Royal Army Medical Corps Territorial Force, to be Major (dated April 1st, 1908). Major Robert Jackson to be Lieutenant-Colonel (dated April 1st, 1908).

Unattached List.—Surgeon-Captain William Owen Evans, from the 2nd Volunteer Battalion, The Royal Welsh Fusiliers, to be Captain, with precedence as in the Volunteer Force (dated April 1st, 1908).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Berwickshire: Honorary Assistant Surgeon J. Forsyth is retired under the conditions of paragraph 103, Volunteer Regulations (dated March 31st, 1908). 1st Midlothian: Surgeon-Lieutenant Duncan R. Macdonald, not having signified his wish to serve in the Territorial Force, is struck off the strength of the corps (dated March 31st, 1908).

Rifle: 1st Volunteer Battalion, The Royal Fusiliers (City of London Regiment): Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel Henry G. Thompson resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated March 31st, 1908). Surgeon-Captain John R. Ryan, not having signified his wish to serve in the Territorial Force, is struck off the strength of the battalion (dated March 31st, 1908). Galloway Volunteer Rifle Corps: The undermentioned officers, not having signified their wish to serve in the Territorial Force, are struck off the strength of the battalion (dated March 31st, 1908):—Surgeon-Captain David D. Monro and Surgeon-Lieutenant Joseph Hunter.

DEATHS IN THE SERVICES.

Surgeon-Major Thomas John Tucker, on Jan. 27th, in his eighty-first year. He entered the army in 1855 as assistant-surgeon, was promoted to surgeon in 1869, and retired with the rank of surgeon-major in 1877. He was present at the mutiny of the three native regiments at Dinapore on July 25th, 1857; at the defeat of the rebels under Koer Singh and capture of Jugdespore in August; advance to Lucknow in February and March, 1858, including the actions of Chanda, Umeerpoor, Sultanpore, and Duraha, the siege and capture of Lucknow (medal with clasp).

INDIAN MEDICAL SERVICE EXAMINATION.

The competitive examination for Commissions in the Indian Medical Service was held on Jan. 25th, 26th, 27th, 28th, 29th, and 30th. The subjects of examination were medicine and therapeutics, surgery and eye diseases, pathology and bacteriology, surgical anatomy, physiology, midwifery and diseases of women and children, pharmacology, and toxicology. 32 candidates presented themselves for 12 vacancies. The following is a list of the successful candidates with the marks obtained by them out of an aggregate of 5100 marks.

	Marks.
Henry Charles Semon, M.A., B.M., B.Ch. Oxon., Oxford University and University College Hospital	4016
Vinayak Balvant Gokhale, L.M. & S. Bombay, Bombay University and University College Hospital	3633
Andrew Monro Jukes, M.D., B.S. Lond., D.P.H. Cantab., St. Bartholomew's Hospital	3566
Gwilym Gregory James, M.B., B.S. Lond., Westminster Hospital	3504
William David Keyworth, B.A., B.C. Cantab, Cambridge University and Charing Cross Hospital	3381
Berkeley Gale, M.B., Ch.B. Glasg., Glasgow University ...	3319
John Howard Horne, M.B., Ch.B. Edin., Edinburgh University	3312
Harold Holmes King, M.B., B.S. Lond., St. Bartholomew's Hospital	3280
Mozaffer Din Ahmed Kureishi, King's College Hospital ...	3231
Richard Edward Flowerdew, M.B., Ch.B. Aberd., Aberdeen University and St. Thomas's Hospital	3225
Alfred John Lee, M.B., B.S. Lond., University College Hospital	3194
John Glendinning Bryden Shand, M.B., Ch.B. Edin., Edinburgh University	3188

THE ARMY MEDICAL SERVICE DINNER.

Lord Midleton, who as Secretary of State for War founded the Royal Army Medical College, was entertained at dinner by the Director-General of the Royal Army Medical Corps and the members of the Royal Army Medical College on Feb. 2nd. Sir Alfred Keogh, in submitting the toast of the evening, said that it was Lord Midleton who first recognised the importance of an efficient medical service not only in diminishing the incidence of disease in time of war but in the cost of sickness in the time of peace. Lord Midleton, in replying, said that for every wounded man that a medical officer could heal he could save a dozen lives by due sanitation of his hospital, by proper selection of the sites for camps, by control of drinking water, by the whole science summed up in the words, "Prevention is better than cure." The seven years which had elapsed since the South African war had been utilised in the better organisation of the medical service which bade fair to make that service what it could not fail to be in the future—the pattern service among the armies of the world. Never again in regard to sanitation, except on the most absolutely and exclusively military points, would the principal medical officer play second fiddle to any combatant officer whatever.

The King has granted permission to Lieutenant-Colonel J. W. T. Gilbert, R.A.M.C. (Territorial Force), attached to the 3rd Home Counties Brigade, to wear the silver medal of the Order of "Orange-Nassau," conferred by the Queen of the Netherlands.

Correspondence.

"Audi alteram partem."

THE MEDICAL REGISTER.

To the Editor of THE LANCET.

SIR,—A very searching inquiry is now being made as to the accuracy of all names and addresses on the Medical Register under the following Section (XIV.) of the Medical Act, 1858:—

XIV. It shall be the Duty of the Registrars to keep their respective Registers correct in accordance with the Provisions of this Act, and the Orders and Regulations of the General Council, and to erase the Names of all registered Persons who shall have died, and shall from Time to Time make the necessary Alterations in the Addresses or Qualifications of the Persons registered under this Act; and to enable the respective Registrars duly to fulfil the Duties imposed upon them it shall be lawful for the Registrar to write a Letter to any registered Person, addressed to him according to his Address on the Register, to inquire whether he has ceased to practise, or has changed his Residence, and *if no Answer shall be returned to such Letter within the Period of Six Months from the sending of the Letter it shall be lawful to erase the Name of such Person from the Register*; provided always, that the same may be restored by Direction of the General Council should they think fit to make an Order to that Effect.

On Feb. 1st a circular of inquiry was posted to every registered practitioner, *excepting only* officers of the Navy, Army, and Indian Medical Services whose names appear in the Navy and Army Lists.

It is of vital importance to all registered practitioners who have not received an inquiry in course of post that they should immediately communicate with this office, as in the event of no communication being received from them it will *be lawful to erase their names from the Register*, according to the Act, and then very serious disabilities will be incurred.

I am, Sir, yours faithfully,

H. E. ALLEN, Registrar.

General Council of Medical Education and Registration of the United Kingdom, 299, Oxford-street, London, W., Feb. 3rd, 1909.

THE RESEARCH DEFENCE SOCIETY.

To the Editor of THE LANCET.

SIR,—Wednesday in last week (Jan. 27th) was the first anniversary of the founding of the Research Defence Society. The committee therefore wish me to send you a short statement of the work of the past year. The society celebrated its birthday by the inaugural meeting of the Dublin Branch. This meeting was held in the theatre of the Royal Dublin Society. More than 220 persons, besides members of the medical profession, have expressed their intention

of joining the society. Among them are the Archbishop of Dublin, Lord Iveagh, Lord and Lady Pembroke, Lord Ashbourne, Lord Monck, the Bishops of Clogher, Derry, Kilmore, and Tuam, the Deans of St. Patrick's and of Christ Church, Dublin, the Provost and Vice-Provost of Trinity College, Dublin, and Sir Neville Lyttelton. By the inauguration of this branch the Research Defence Society, which had but seven members in January, 1908, will now have more than 2200, of whom 250 are ladies. The society has lost by death ten members: Professor Ayrton, Sir John Banks, Mr. Harold Barnard, Dr. C. E. Beevor, Dr. J. G. Glover, Mr. Arthur Lister, Lord Poltimore, Mrs. Roget, the Earl of Rosse, and Sir Thomas Stevenson.

Since the last report which I sent to you in May of last year the following have consented to be Vice-Presidents of the society:—Sir William Abney, Mrs. Garrett Anderson, Sir Robert Ball, Lord Barrymore, Lady Bliss, Lady Buckley, Lady Burdon Sanderson, the Dean of Chester, Lady Cromer, Lady Foster, the Earl of Glasgow, Sir Samuel Hoare, Lord Lamington, Sir Frank Lascelles, Lord Malmesbury, the Duke of Montrose, the Duchess of Montrose, Mr. Eden Phillpotts, Lady Priestley, the Bishop of Rangoon, Mrs. Romanes, the Marchioness of Sligo, Lord Stalbridge, Lady Stanley of Alderley, Lady Sutton, Sir Reginald Talbot, Mr. A. G. Vernon-Harcourt, Bishop Welldon, the Duke of Wellington, Mrs. Robert Peel Wethered, and the Bishop of Winchester.

Rules for the society and for the branch societies have been approved by the committee and will be submitted in due course to a general meeting of the society. Branch societies have already been formed, or are in course of formation, in Birmingham, Bournemouth, Brighton, Cambridge (University branch), Dublin, Edinburgh, Hull, Leeds, Liverpool, Manchester, Norwich, Oxford, Shrewsbury, Torquay (Devon branch), and York. Several of these branches have already more than 100 members. The progress of the society has been watched with great interest in America by many well-known representatives of science and medicine, and steps have been taken for the Defence of Research in the United States.

The society has issued the following pamphlets: (1) Letter from the President, announcing the formation of the society; (2) Report of the Inaugural Meeting; (3) Experiments on Animals during 1907 in Great Britain and Ireland; (4) Some Facts as to the Administration of the Act; (5) The Value of Antitoxin in the Treatment of Diphtheria; (6) Evidence of Sir Frederick Treves; (7) Yellow Fever and Malaria; (8) Have Experiments on Animals Advanced Therapeutics? (9) The Extinction of Malta Fever; (10) Evidence of Lord Justice Fletcher Moulton before the Royal Commission, July, 1907; and (11) The Work of the Research Defence Society.

A further series of pamphlets is in course of preparation, including (1) the recent correspondence in the *Times*; (2) an account of the use of a serum treatment in cases of epidemic cerebro-spinal meningitis; (3) an account of the anæsthetics used in experiments on animals; (4) answers to some statements commonly made by the opponents of all experiments on animals; and (5) a reprint of Dr. Bashford's article on the Advance in the Knowledge of Cancer (*Nature*, Dec. 31st, 1908).

A great many bound sets of the pamphlets already issued have been sent to the chief public free libraries in London and in other towns, and to many other libraries, institutes, and clubs. Very many have also been sent in answer to personal applications. These bound pamphlets may be procured through any bookseller. Representatives of the Research Defence Society have spoken at a large number of meetings or debates in London or in other towns. On other occasions the society has sent literature for the use of speakers in debate. The society is always willing to send a representative to a debate arranged by any literary society, club, or debating society, or to any public meeting, with this exception, that it does not propose to accept "challenges" from the antivivisection societies or to arrange with them the terms of a debate. A collection of lantern slides has been prepared, with a descriptive catalogue, for the use of anybody who wishes to give a lecture on some of the discoveries that have been made by the help of experiments on animals. I am, Sir, yours faithfully,

STEPHEN PAGET,
Honorary Secretary Research Defence Society.

Harley-street, W., Feb. 2nd, 1909.

THE SECTION OF ANÆSTHETICS OF THE ROYAL SOCIETY OF MEDICINE AND THE PROPOSED GENERAL ANÆSTHETICS BILL.

To the Editor of THE LANCET.

SIR,—Dr. Frederic Hewitt has addressed you upon the subject of the proposed Bill and the commencement of a discussion held in this section on Jan. 20th dealing with this suggested legislation, and as the report of the discussion sent to you is so brief the general reader may accept the presentment given by Dr. Hewitt in his letter. As this is not wholly in accord with my view of what transpired at the meeting, I desire to place the other side of the question before your readers.

The suggested measure deals with (1) restriction whereby qualified and registered medical men alone may administer general anæsthetics. It admits as exceptions (*a*) dentists holding a dental but not a medical qualification before the time of the passing of the proposed Bill; (*b*) persons acting under the immediate direction and supervision of a legally qualified medical practitioner; (*c*) the administration of an anæsthetic by an unqualified person under circumstances of urgency when the delay which would have arisen in obtaining the services of a legally qualified medical practitioner would have endangered life. (2) With compulsory education of all medical students. The meeting of the Section of Anæsthetics was called to consider the whole subject embraced by the Bill and whether the draft measure offered the best means of achieving the end in view.

In my remarks I attempted to demonstrate my sympathy with the spirit of the proposed legislation, but I pointed out that it possesses some weaknesses which might imperil its chances of acceptance by the legislature. While approving the spirit of the first clause I submitted that "qualified" as employed in the Bill should admit not only persons holding medical diplomas but also those possessing dental diplomas. Granting this, the clause would be of great value and would not penalise a large number of competent and honest practitioners. The principle is admitted in Clause 3 which excepts the case of L.D.S. men and others registered as dentists before the passing of the proposed Bill. However, I suggested that such persons should be restricted to employ nitrous oxide and not the more dangerous anæsthetics. The obvious criticism upon such a restriction is that if one anæsthetic is allowed why not all, since the danger involved is one of degree. I am convinced, however, that such a restriction would not harm the dentist and would safeguard the public. My reasons for proposing this amendment, which I submit strengthens rather than weakens the proposed measure, are briefly: (*a*) Nitrous oxide was discovered by a layman, adopted as an anæsthetic by a dentist for dentists, and has been since its introduction an accepted part of the dentist's outfit. The extremely few accidents which have occurred with this agent have not been solely in the hands of persons not possessed of a medical as opposed to a dental qualification. (*b*) The public would be greatly inconvenienced if dentists were forbidden the use of nitrous oxide. In places outside wealthy communities but few patients could afford a double fee—one for the doctor and one for the dentist. There is a danger also that through this restriction in many cases in remote places where the doctor is unfamiliar with the use of nitrous oxide or has little experience he would adopt chloroform as the anæsthetic, thereby greatly increasing the risk of the operation. Further, if dentists were forbidden nitrous oxide they would in many cases adopt local injections into the gums—a procedure which is possibly more perilous than is nitrous oxide. *Apropos* of this point, I animadverted upon another weakness in the drafting of the measure in that it did not include the uses of toxic agents such as cocaine, stovaine, and their congeners, and so excluded from its purview intrathecal or spinal and subcutaneous and submucous injections. Unscrupulous persons, who being unqualified to practise and who prey upon the public's credulity, would not hesitate to adopt even such heroic measures, and could do so with impunity. I also pointed out that in the case of midwifery practice, and especially among the poor, it would be extremely difficult to enforce the letter if not

the spirit of the law as "emergency" would be pleaded in practically every case. The present system, which permits the accoucheur to commence the anæsthetic and then leave the chloroform-moistened towel or what not in the hands of the nurse, female friend, or even of the patient herself, is a vicious one, but I doubt if the proposed measure would remedy it. I do not agree with Dr. Hewitt if his words imply that the first clause is more important than the second. It seems to me absolutely necessary if we restrict the use of anæsthetics to the hands of medical men that such men should be not only taught, but efficiently taught, both the physiology, pharmacology, and the practical uses of anæsthetics. I urged at the meeting of the section that this should be so and pointed out that the anomalous position of anæsthetists attached to hospitals, upon whom the burden of teaching would fall, made such efficient teaching very difficult. The doubtful status of the anæsthetist and the slight importance at present attached to the subject both in the curriculum and at the examinations accentuate this difficulty. I contend that perfunctory instruction and vicarious "signing up" of students are not only undesirable but would amount almost to a fraud upon the public if it were led to believe that all medical students received sufficient teaching to render them expert anæsthetists.

These, Sir, were the lines upon which I allowed my criticism to travel. To criticise is often the proof of most sincere regard, and I am sure that upon reflection Dr. Hewitt will see that it is my earnest desire to promote the interests of the public and my profession which has led me to avoid the easy path of banal acquiescence and choose that thorny road which, if critical, is honest and often leads the traveller home by the best way.

I am, Sir, yours faithfully,

Mortimer-street, W., Feb. 1st, 1909. DUDLEY W. BUXTON.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Jan. 30th Dr. Frederic Hewitt expresses his surprise that his legislative proposals were not received with open arms by the Section of Anæsthetics at its meeting on Jan. 20th. As one of those who had the misfortune to find themselves in opposition, might I be permitted to place on record my reasons for adopting what appears to Dr. Hewitt "and others" to have been an extraordinary course?

It is generally conceded, I think, that the proposed measure introduces an entirely new principle into medical legislation; and that if passed it is likely to lead to a very radical revision of existing enactments. Under these circumstances it is more than usually imperative that the promoters of the Bill should be able to prove: (1) that there is urgent need for the Bill; (2) that the Bill, as drafted, is workable and has a reasonable prospect of attaining its object; and (3) that this object cannot be attained in any simpler way. In my opinion the proposed measure fails in each of these particulars.

1. In the "Memorandum" attached to the proposed Bill it is stated that the need for legislative protection is indicated by the powerfulness of the drugs employed, their extensive use, and the number of deaths following their employment. Neither taken separately nor collectively do I think that these reasons alone indicate any degree of urgency or justify exceptional legislative protection. Those who are asked to support the Bill should at the very least be convinced, and be in a position to convince others, that the drugs are too easily obtainable; that they are often used for other than surgical purposes, and very frequently employed carelessly and improperly by unqualified people; and that the actual death-rate from anæsthetics alone (apart, that is, from concurrent disease, accidents, and the severity of the surgical procedures) is dangerously out of proportion to the number of administrations, and that this disproportion is largely due to the above-mentioned methods of employment.

Numerous *opinions* have been expressed upon many of these points, but it seems to me that reliable information is still to seek; the facts and figures hitherto brought forward are, to my mind, unsatisfactory or too few in number to justify such drastic remedies as protective legislation. My views upon deaths during anæsthesia have been expressed so recently[1] that I need hardly refer to them again here.

[1] THE LANCET, April 18th, 1908, p. 1173.

2. Nor does the Bill itself, as drafted, seem to me to be workable or to have any reasonable prospect of attaining its object. In the first place I would point out that, as far as I can see at any rate, no machinery is provided for carrying out the provisions of the Bill; would the Act be enforced by the General Medical Council, by the police, or by whom?

With regard to Clause 1, I cannot help thinking that the penal portion is practically annulled by the provisoes, for a case must be very bad indeed that cannot sustain a claim for exemption under one or other of these. I believe, too, that the powers of the General Medical Council in respect to "covering" and the employment of "unqualified assistants" either are, or with very little trouble could be made, applicable to this particular class of offence. If I am correct in this view the effect of this Bill would be to legalise this form of "covering" and the public would be even less protected than it is at present.

The objections to Clause 2 have been so fully set forth by the General Medical Council that I need do no more than endorse its remarks. I would point out, however, that whereas the Privy Council seems to consider that Clause 2 is the most important part of the Bill the General Medical Council almost appears to think that it is precisely this clause which presents the most difficulties.

Probably the most troublesome clause in the Bill to deal with is Clause 3 relating to dentists. The effect of this clause will be that no dentist holding the L.D.S. alone (obtained after the passing of the Act), will be permitted to administer nitrous oxide, except under the provisoes contained in Clause 1. My view of the matter is that, so far as nitrous oxide is concerned, the dental student is better instructed and has more opportunities of obtaining experience in the administration of this drug than the medical student has, or is ever likely to have; that on the whole the patient is safer in the hands of the average L.D.S. than in the hands of many general practitioners, and consequently that this clause in its present form will be of no real benefit to the public, but rather the reverse. I would note here, too, that no provision is made in the Bill for dealing with those cases in which the qualified practitioner or dentist gives the anæsthetic and himself performs some trivial operation or extracts a tooth; this I believe to be not uncommon, and to my mind it is a most dangerous and pernicious practice. On the whole, therefore, I have come to the conclusion that the only people who are likely to obtain any benefit from the proposed Bill are the "specialists" themselves, and I for one would prefer to be without the protection which such "class legislation" is supposed to afford.

3. The agitation which Dr. Hewitt has started will, I think, have the very good effect of again drawing the attention of the public and the educational authorities to the importance of the subject, and perhaps of inducing other authorities to extend or to make a more energetic use of the powers they already possess. It is, I believe, on these simpler lines, rather than by direct legislation, that we should proceed. I am, Sir, yours faithfully,

J. FREDK. W. SILK.

Devonshire-street, Portland-place, W., Feb. 1st, 1909.

UNSCRUPULOUS TACTICS.

To the Editor of THE LANCET.

SIR,—Passing our local police station the other day I saw the following notice on the notice board:—

STRAY DOGS.

IMPORTANT NOTICE.

There followed a quotation from the Dogs Act, 1906, consisting of two paragraphs. The first (to the effect that anyone taking a stray dog home must give full information to the police) was in a medium-sized type; the second (to the effect that such dogs may not be given or sold for purposes of vivisection) was in much larger type. Below this was the following: "Leaflets and all information can be had gratis of the National Canine Defence Union, 27, Regent-street, S.W., Benjn. Bryan, secretary."

It seems to me an unsatisfactory thing that a private society like this should be able to obtain an advertisement on the police boards, and I am going to ask a Member of Parliament whether he will put a question in the House on the subject. Meanwhile, I would suggest that other readers of THE LANCET take the trouble to look at the police notice

boards in their own district, and if they find the notice there to communicate with their Members of Parliament on the subject.

I am, Sir, yours faithfully,

Upper Norwood, Jan. 28th, 1909. S. W. CARRUTHERS.

*** It is an old hallucination that scientific men, either in person or by deputy, prowl about seeking to bribe anyone who takes possession of a stray dog to part with the stolen property for a good price. Does anyone really believe this, and, if so, is he sane? On the other hand, is he honest who says it without believing it?—ED. L.

EPSOM COLLEGE.

To the Editor of THE LANCET.

SIR,—In reference to the letter from "J. P." which appears in THE LANCET of Jan. 30th, p. 350, will you allow me to mention that a statement of accounts, showing in detail the income and expenditure of the College, is forwarded annually to all governors and contributors. I therefore conclude that your correspondent is not himself a governor or he would have received one. Any person interested in our work can obtain a copy of the council's annual report containing "the statement," on application to the office, 37, Soho-square, London, W.

It will interest your correspondent to know that not only upon the finance and works committees but upon the council generally there are, and have, I think, always been laymen, each of whom takes an active interest in the work of the College; and from their knowledge of business and of affairs generally they render the executive most valuable assistance and advice.

I am, Sir, yours faithfully,

HENRY MORRIS,

Soho-square, W., Jan. 30th, 1909. Honorary Treasurer.

To the Editor of THE LANCET.

SIR,—While crediting your correspondent "J. P.," whose letter appears on Jan. 30th, with the best intentions, may I, as a non-medical member of the public and an old College boy, challenge his inference that the accounts of the College are not published? To print and send round voluminous details with every appeal sent out would involve a heavy outlay, and I think be of little service to the majority of the public; but a very full report of all income and expenditure, most carefully audited by chartered accountants, is printed annually and sent to all subscribers, and anyone else desiring a copy will, I am sure, be supplied on application to the secretary, whom I have always found most courteous and ready to afford every information.

As regards the council, it is by no means entirely composed of medical men, but includes business men of the highest integrity and experience, who take a most active part in all that concerns the College.

May I suggest to your correspondent that he forthwith appends his signature to a cheque and sends it to the secretary and he will promptly receive, as I have done, a voluminous report and balance sheet of some 16 pages.

I am, Sir, yours faithfully,

PERCIVAL TURNER.

Adam-street, Adelphi, London, W.C., Feb. 2nd, 1909.

DISUSED INSTRUMENTS FOR MEDICAL MISSIONS.

To the Editor of THE LANCET.

SIR,—I am hoping that you will allow me to appeal through your columns for an object which will, I feel sure, commend itself to many of your readers. The particular appeal comes this time from a gentleman who is devoting himself to medical mission work in India under conditions which call out the heroic qualities which happily he possesses. This mission doctor writes from Bengal:—

> We have lately opened an out-station hospital in charge of an assistant-surgeon, but it is almost totally unsupplied with instruments and I have to borrow from another hospital where the supply is already very limited. There are many doctors at home who discard useful instruments in favour of newer patterns. If we had some that they will never use again we could turn them to good account. I once had to do Manson's operation for abscess of the liver with a trocar made for the occasion by a blacksmith in the bazaar, and made the device for insertion of the drainage-tube out of the dust cap of my bicycle. The patient (a European) did very well indeed, but it is not an experience I should care to have to repeat.

If any of your readers are willing to help this very real need and so back up a splendid piece of self-sacrificing work I shall be glad to receive and acknowledge the gifts if sent to the S.P.G. House, Tufton-street, Westminster.

I am, Sir, yours faithfully,

W. P. DOTT,

Secretary, Medical Missions Department, Society for the Propagation of the Gospel in Foreign Parts.

Jan. 27th, 1909.

PS.—This new department of the Society for the Propagation of the Gospel is greatly in need of immediate financial support. Donations should be marked "Medical Missions" and cheques should be made payable to the "Treasurers of the Society for the Propagation of the Gospel."

THE CAUSE AND PREVENTION OF DENTAL CARIES.

To the Editor of THE LANCET.

SIR,—The remarks which have been recently made in THE LANCET by different correspondents are suggestive and I devoted several pages to the cause and prevention of the decay of the teeth in my book, "The National Physique." In it I attributed the main predisposing and constitutional cause of its prevalence to the malnutrition induced by anæmia. Although inefficient food may be a contributory cause I do not think the dietary of the people of this or of other countries among whom caries is frequent can be so deficient in the necessary constituents as to account for its widespread occurrence. While retaining my views it is not necessary wholly to dissent from some of those which have been put forward with regard to diet as it has long been recognised that a defective food-supply is one of the many causes of anæmia. The question of bread seems to me one of the most important points which have been considered with respect to foods, and a number of medical observers have formed the opinion that the consumption of wholemeal bread, containing as it does a higher percentage of proteids and salts than white bread, would be more effective in maintaining the normal nutrition of the teeth and of other structures of the body.

In all countries, however varied the diet may be, there is a staple article of food of a vegetable nature, and an investigation into the prevalence of caries in India, China, and Japan, where rice is the principal food, and parts of Africa where mealies are, as well as in other countries where the darker kinds of breads are used, might help to decide the question, which as it concerns vital interests to the maintenance of the health of the body as a whole seems to be well worthy of a special inquiry. There is also another point in connexion with food which might repay investigation, that is its preservation. Antiseptics as boric acid, carbolic acid, and salicylic acid are used in the preservation of meat, milk, fish, and other foods. Acids are considered to be an exciting cause of caries owing to their effect on the enamel. Is it not then possible that their presence in food may have some effect in the causation of caries? Putrefactive changes commence at once in dead animal or vegetable matter, but it is only when of a certain degree that they become harmful on ingestion into the human body. It is a question whether the protection of articles of diet from air, dust, and midsummer's heat would not be preferable in most cases—both from the point of view of the teeth and of the general health—to the use of an antiseptic substance. Another possible exciting cause is that from antiseptics—as boric and carbolic acid—contained in various tooth powders. In connexion with the cleansing of the teeth the removal of particles of food from between them and the use of a harmless powder would be likely to be efficacious without attempting to destroy the inevitable bacteria, at any rate, with substances which tend to injure the enamel.

I am, Sir, yours faithfully,

Oxford, Jan. 18th, 1909. A. STAYT DUTTON.

To the Editor of THE LANCET.

SIR,—Dr. O. Clayton Jones points out that very little evidence has been produced in support of the view that "the essential cause of dental caries is a faulty system of feeding." May I therefore be permitted to say that my own belief is

that the cause lies principally in three articles of diet—namely, sugar, tea, and meat—and to bring forward some evidence in support of it?

In the first place, as regards sugar, Dr. Francis Hare, in his "Food Factor in Disease," has written as follows: "Sugar is perhaps the worst article of diet. ..... On the subject of 'sugar gluttony' Professor Ogston expresses himself with no uncertain voice. He (Professor Ogston) had had many years of experience among children. ..... There were some children in whom the gluttony of sugar had become so strong that their infatuation for it resembled the craving of the drunkard for the dram. Such saccharomaniacs showed early disappearance of the teeth from decay. ..... He would not be surprised if future observers were to place the evils of sugar-gluttony on a pedestal as conspicuous as the drink question in causing deterioration of individuals and races." Secondly, with regard to tea. This is now drunk universally among even the poorest classes and has displaced the drinking of milk. In tea we have a drink in which there is no nourishment, but which is simply stimulating and contains tannic acid and purin, whereas in milk, besides albumin and fat, there are a number of valuable food-salts. Can we doubt but that this change in diet is decidedly for the worse? And, lastly, meat has a direct action upon the teeth by effecting a change in the saliva which leads to deposits of tartar.

In the days when teeth were good there was neither sugar nor tea and very little meat partaken of by the country population. As a specimen of what the dietary was some 40 years ago I obtained recently the following particulars from a man who in his youth was employed as an agricultural labourer. I give the details exactly as he gave them to me, thus: "No sugar. Fresh meat was considered a luxury and was eaten only on Sundays. On other days salt pork for dinner. There was always plenty of vegetables, such as cabbage, parsnip, turnip, &c.—at any rate, three or four times a week. The usual breakfast was a basin of hot milk and bread, followed by fried bacon and potatoes; the same for supper at 6.30 P.M. At 10.30 A.M. a lunch of bread and cheese. Bread chiefly consisted of barley flour, but there was also wheat-flour with the bran left in it, which when made up was coarse." The fine white bread of the present day may also be a contributory cause in effecting decay of the teeth. The Chinese do not eat meat; the tea as usually drunk by them is extremely weak; and sweetmeats are, I believe, consumed only by the wealthy. Considering that the decay of the teeth of our population has been contemporaneous with the consumption on a large scale of sugar, tea, and meat, and that the teeth of the Chinese still continue, so far as I know, as good as they ever were, I think I am justified for the present in looking to sugar, tea, and to meat as the chief cause of dental caries.

I am, Sir, yours faithfully,

Savernake, Torquay, Jan. 29th, 1909. F. R. CAVE.

To the Editor of THE LANCET.

SIR,—In a well known monograph on the Relation of Dental Caries to Food, &c., among Aboriginal Races the late Mr. J. R. Mummery gives some precise statements with regard to the teeth of the Chinese. Of the 19 races examined by him the Chinese have the most carious teeth, over 37 per cent. being affected. He notes also that the teeth are "often very extensively carious." We may fairly infer that the soft nature of the food has perhaps something to do with the amount of caries. But it may be said that the teeth of the English are much more carious than the teeth of the Chinese. This is so, and is equally explicable because, over and above the fact that the Chinese cook their rice in a less pappy, sticky, or sugary way than is usually done in this country, almost all the other foods commonly consumed—"pork, poultry, fish, salted cabbage, and vegetables"—are not of a "short," lodgeable, or sticky nature, but rather of the fibrous character which tends to clean the teeth and keep them free from caries. Moreover, it is in early life that irreparable injury is often done to the dental organs and in China the soaking of food in milk and the giving of milk to children after they have a complete set of temporary teeth is practically unknown. The food prepared from millet is not spread with marmalade or jam, and instead of being given toffee or biscuits to keep them quiet the Chinese children are frequently given sugar cane to chew. It seems difficult to conceive of a dietary which would hinder the natural self-cleansing processes of the mouth more effectually than that which restricts children to bread soaked in milk, porridge and milk, milk pudding, potatoes and gravy, bread and jam, and biscuits and milk. If the Chinese have outdistanced this "system" of pap-feeding, which is carried out fairly thoroughly in England, it is difficult—notwithstanding Mr. F. R. Cave's remarks—to see how they manage it with the foods at their disposal.

I am, Sir, yours faithfully,

Wimpole-street, W., Jan. 30th, 1909. J. SIM WALLACE.

*** This correspondence which we bring to a close with the present issue has brought out many interesting and debateable points in connexion with this all-important question of caries of the teeth. A perusal of the various letters indicates clearly that there is a marked divergence of opinion on the question of etiology, and we cannot help thinking that this is in some measure due to the absence of real scientific data bearing on the problem.—ED. L.

A PRELIMINARY NOTE ON COLLOID MERCURY.

To the Editor of THE LANCET.

SIR,—Colloid mercury is prepared by passing an electric current through water in which is placed some mercury. The result of the passage of a current, suitable both as regards quality and quantity, is the breaking up of the mercury into extremely fine particles, so fine as to be too small to be seen through a powerful microscope except by the ultra-microscopic method, and even then, to use an Irishism, are not seen but only the reflection of the light from the particle as it sways to and fro, which is taken as evidence of the presence of the particle. These very fine particles are so light that they are suspended in the water to which they give a brown or muddy tinge. If this liquid is filtered it all passes through the filter paper in a way resembling a simple solution. When it is attempted to pass the liquid through an animal membrane, only the water goes through and the mercury remains behind.

Very little work has been done in this country with mercury in this form, but in France Professor Robin has published a book on the subject under the title "Les Ferments Métalliques." He seems to have treated all sorts of conditions by hypodermic injections of these colloid solutions, and with results worthy of a universal panacea. Such an absurd success ought not, however, to deter the medical man from looking into the matter for himself, and with that object I decided to try its effect. The fluid was made for me by Merck of Darmstadt, and I decided to use it in those diseases where mercury had been proved beneficial to see if it was superior in any way to the other forms of mercury.

The first subject was a man who when a soldier in India had contracted syphilis, and who a few years later seemed to have contracted the disease a second time, or at least had a severe recrudescence of the original attack. When I saw him he had ulcers about an inch in diameter on his forehead, chin, nose, and other places all of which refused to react in any way to either mercury or iodide. At my suggestion he was given some of the solution I had recently received from Germany and at the end of a week there was a very marked improvement, and at the end of a fortnight the ulcers were nearly all covered over. The dose given was ten minims of a 1 per cent. solution, so that he only took one-tenth of a grain of mercury for a dose. The effect was excellent, but when one considers that it was produced with such a small dose one cannot help being struck with the contrast between such a small dose and the much larger ones that are usually given. The advantages are many, for the mercury can be given in a liquid form, which always seems to me much superior to the dry form as pill or tablet. The liquid is tasteless and needs no flavouring or other agents to interfere with it. Other syphilitic cases have reacted in an equally remarkable manner, but as this is only a preliminary note, having as its sole object the drawing of attention to the value

of the drug in the hope that it may be tried by others and its merits corroborated, I forbear now to give further details.

I am, Sir, yours faithfully,

Swansea, Jan. 17th, 1909. G. ARBOUR STEPHENS.

STANDARDISATION OF DISINFECTANTS.

To the Editor of THE LANCET.

SIR,—In your issue of Jan. 16th, 1909, p. 193, the secretary of Jeyes' Sanitary Compounds Co., Limited, writes: "No sympathy surely can be felt with the cruelty of selling useless disinfectants, and certainly until a better one is devised the Rideal-Walker test, fairly and honestly utilised, is useful and salutary, and, be it observed, this test has been largely favoured by official recognition all over the world." May I be permitted to point out that, as I read the letters which have appeared in THE LANCET, no one is seriously attacking the "Rideal-Walker test" as a test; all that is being asked for is some board of reference or some research by independent men absolutely free from the slightest taint of being influenced by direct or indirect connexion with the disinfectant trade. The need for such a board of reference is obvious, from the fact that the scientific advisers to disinfectant manufacturers sometimes differ very gravely as to the results obtained with the Rideal-Walker test. Messrs. Jeyes honestly believe that they are selling nothing under a coefficiency of 4; I, as the scientific adviser to Messrs. Newton, Chambers, and Co., Limited, honestly believe that Messrs. Jeyes are mistaken. Now, Sir, I ask for the independent board of experts to which these firms may appeal.

I am, Sir, yours faithfully,

M. WYNTER BLYTH.

Upper Gloucester-place, Feb. 1st, 1909.

*** Mr. Wynter Blyth is correct in attributing to THE LANCET one reason, and one reason only, for the publication of this correspondence. We are supporting the institution of an independent research, and upon this point we say something further in an annotation this week. We have received letters, which have not been published, from the chairman of the Sanitas Co., Limited, from the managing director of Jeyes' Sanitary Compounds Co., Limited, and from other interested persons. They have not been published because, where we can help it, we do not intend the larger question to be obscured by the introduction of personalities. As, moreover, legal proceedings have been openly talked about by certain persons, and as published circulars, to which allusion is made in these letters, have been termed libellous, it seems to us that there are sides to the discussion which cannot be conveniently ventilated in a newspaper.—ED. L.

PURULENT CONJUNCTIVITIS OF INFANCY.

To the Editor of THE LANCET.

SIR,—I see that the Council of the British Medical Association has appointed a sub-committee, under the name of "ophthalmia neonatorum," to inquire into the incidence of the purulent conjunctivitis of infancy. I strongly suggest that the first matter to which that subcommittee should address its attention is that of assigning to the disease the name which correctly describes it. The term "ophthalmia" owes its origin to ignorance; in these days it implies nothing. For ages, through ignorance, it was appended to many diseases of the eye, such as rheumatic ophthalmia, strumous ophthalmia, arthritic ophthalmia, and gonorrhœal ophthalmia. All these expressions, with increased knowledge, have passed out of use, and to the diseases in question the correct definition has been given. The continued use of the term "ophthalmia," however, in connexion with the purulent conjunctivitis of infancy is, I contend, largely answerable for the neglect and want of due recognition of the disease in the past—into which matters the subcommittee has been appointed to inquire. Upon the term has been built a superstructure of mystery and misconception which has traditionally misled practitioners, midwives, and nurses into ignoring the true significance of the disease and into believing that such cases when they occurred could be generically regarded as only a little "ophthalmia." What wonder, then, that so much blindness has resulted from the disease in these circumstances. What wonder that practitioners should continue to overlook such cases and midwives to persist in treating them with milk and cold tea until the vision has been permanently destroyed. Again I say, how can this be otherwise as long as most ophthalmic surgeons, simply for the reason of paying tribute to that oftentimes irrational fetich called custom, continue to perpetrate the ignorance which the term "ophthalmia" conveys.

It has been held by some that the term is useful as indicating a "generic" condition of conjunctival inflammation. I cannot conceive of a contention more inane than this. Just as well, for example, might it be argued that the old-time expression "perityphlitis" should be retained to describe an attack of appendicitis. It is, however, of little avail, the present generation clinging tenaciously to the term "ophthalmia," for which apparently so much affection is displayed; in the next generation the word will have passed into that oblivion which constitutes the fate of all ignorance which knowledge has displaced.

But there is another aspect from which this question can be viewed. I allude to the complexity, the multitudinous variety of methods of treatment of cases of purulent conjunctivitis in infancy. If in this day the question were categorically asked, "What is the expert treatment of this disease?" the answer can only be, "Oh, some ophthalmic surgeons use this 'ol,' some that 'ol,' some nitrate of silver, some perchloride of mercury, some repeatedly deluge the conjunctival sac with pints of permanganate of potassium, and some resort to methods of their own which do not see the light of publication. Amid such therapeutic chaos and unnecessary confusion it is evident that the bad impression thus created by these diverse opinions could not fail to react harmfully upon the minds of those to whom the cases first come for treatment. Apart, however, from the conclusions at which the subcommittee upon purulent conjunctivitis of infants may happen to arrive, we must still regard the matter not merely as a national but as a racial one—one, that is, which affects humanity at large. Well, therefore, would it be if at the forthcoming meeting of the International Ophthalmological Congress a subcommittee were to be appointed to agree, first, upon the proper terminology of the disease, and, secondly, to draw up a definite schedule of treatment which would serve as an authoritative expression of opinion, to be incorporated in all future text-books and to be regarded as the standard loyally adopted and advocated by ophthalmic surgeons throughout the world. This would constitute the first definite step in the organisation of a system designed for the purpose of checking the ravages of this fateful disease. On the other hand, it is impossible to anticipate beneficial results from any action which may be taken in this regard unless the matter has been placed upon the firm basis of organisation. Lastly, so far as the suggestion is concerned of attempting to secure legislation for the betterment of the present deplorable results of the purulent conjunctivitis of infancy, to that I am opposed. Legislation may in the future be necessary but its advocacy at the present moment is certainly premature. To the commonsense legislator the ordinary question would first suggest itself, "Have ophthalmic surgeons exhausted the means at their command to guide the profession and those concerned towards the proper realisation of the significance of the disease, its prevention, and treatment?" I, as an ophthalmic surgeon, feel bound to submit that the answer to this question must be in the negative and partly for the reasons which I have indicated above.

I am, Sir, yours faithfully,

Wimpole-street, W., Jan. 27th, 1909. PERCY DUNN.

THE TREATMENT OF SYPHILIS.

To the Editor of THE LANCET.

SIR,—The article by Dr. Stopford Taylor in THE LANCET of Jan. 30th, p. 309, affords another example of the dangers of the metric system. Thus, when using a grey oil which contains 40 per cent. by weight of metallic mercury he estimates that 14 centigrammes of this grey oil contain 2·5 grains of metallic mercury. The actual words are: "The

syringe which I use is that of Barthelemy; it is graduated in centigrammes, a complete syringeful holding in all 14 centigrammes, and as this amount of grey oil contains 2·5 grains of metallic mercury by weight no mistake in the dose can be made." Calculation shows that 14 centigrammes of this grey oil contain 5·6 centigrammes, which is equivalent to between ½ and 1 grain of metallic mercury.

I am, Sir, yours faithfully,

Stratford-place, W., Feb. 2nd, 1909. T. P. BEDDOES.

OLD AGE PENSIONS IN THE UNITED KINGDOM.

To the Editor of THE LANCET.

SIR,—It seems impossible to believe that only 7·1 per cent. of persons in Ireland aged upwards of 70 years were ineligible for pensions through the receipt of Poor-law relief or by the possession of independent means above the statutory limit, whereas in Scotland no less than 53·8 per cent. of persons aged above 70 years had no pension assigned to them. This contrast is the more striking in connexion with the fact that the proportion of the population recently in receipt of Poor-law relief, which in Scotland did not exceed 22·6 per 1000, was equal to 24·1 per cent. in Ireland. There is therefore no ground for attributing the excessive proportion of old age pensions granted in Ireland to a smaller proportion of septuagenarians being there disqualified by the receipt of Poor-law relief. From a statistical point of view, and as a matter of public finance, and of justice between the several portions of the United Kingdom, this matter calls for thorough and impartial investigation.

I am, Sir, yours faithfully,

X. Y. Z.

SANITATION IN INDIA.

THE PREVALENCE OF ENTERIC FEVER AMONGST BRITISH TROOPS IN INDIA.

(FROM A SPECIAL CORRESPONDENT.)

VI.[1]—*Sources of Infection.*

Aerated waters.—In 1899 in the Army Medical Reports for India we find the first mention of bazaar-manufactured aerated waters as a likely source of enteric fever. In that year the use of mineral waters obtained outside cantonments was given as the cause of the disease at Aden, and the bacillus coli communis was detected in soda-water at Chakrata, and in the sediment deposited on a Pasteur filter used in one of the regimental aerated water manufactories at Lucknow. In 1900 bazaar aerated waters are mentioned as probable sources of the disease in cases at Meerut and Bhamo. In 1901 infection is again recorded at Chakrata and in some of the cases at Gharial and Upper Topa. The Bombay Command sanitary officer found a microbe resembling the bacillus mesentericus in one of the samples of soda-water sold by a native firm in Mhow bazaar. In 1902 cases at Agra, Chanbattia, and other stations were attributed to infection derived from aerated waters. In 1903, during an epidemic of enteric fever at Pretoria, South Africa, it was discovered that the soda-water supplied by one of the largest manufactories contained the bacillus coli communis, and subsequent examinations of other soda-water supplies showed the existence of similar contamination. Bacteriological investigation proved that contamination was greater in those factories which used a hand method of washing bottles than in those which cleaned bottles by spray and running water. These facts indicate the dangers associated with aerated waters in the spread of disease in garrisons and towns. The dangerous possibility that germs of disease may be conveyed from bottle to bottle through dirty unchanged wash water can only be obviated by a system of bottle sterilisation, by boiling, either before or after their return to factories. Laboratory experiments proved that soda-water became sterile after 14 days, and as far as possible the supply for troops in South Africa was issued after this period of storage. Returning to Indian garrisons, we find that in Indore in 1904 the chief cause of enteric fever infection was attributed to bazaar aerated waters manufactured by native firms over which there was no European supervision or control. At this station several bottles of lemonade were bought in the bazaar for examination and were found to contain sediment, and on keeping they went bad and smelled. At Sialkot in the same year enteric fever infection was attributed to bazaar-manufactured mineral waters. During September, 1905, six cases among British troops and one woman contracted enteric fever at Ahmednagar, the source of infection being traced to impure mineral waters. A raid was made on the bazaar and 12 bottles were collected, all of which on bacteriological examination were proved to contain the bacillus enteritidis sporogenes, the presence of which in water points definitely to fæcal contamination of some kind (Melville). All bazaar mineral waters were immediately forbidden and all factories were ordered to be closed, except regimental factories, and the outbreak of enteric fever at once ceased. Bazaar aerated waters may be regarded as a probable source of enteric fever infection and their careful inspection is necessary as there is a large consumption by soldiers in India, partly because men dislike the flat insipid taste of the boiled or "pinked" (permanganate of potassium) drinking water, which is as often as not imperfectly cooled, and partly because in the hot weather arrangements are made in regimental institutes and other places for supplying aerated waters iced or at least cooled.

The importance of purity of water used in the manufacture of aerated waters is too obvious to require comment, and most of that used is taken from the same sources as other drinking water in barracks, but, as in the case of drinking water which will be referred to later, it may become contaminated in the course of handling. This may occur in a variety of ways, the chief of which are defective means of drawing and carrying, defective plant, carelessness in washing the bottles, and want of personal cleanliness on the part of the natives who are invariably employed as bottle-washers. The water used for washing bottles may also be derived from contaminated sources and cases are on record where such water has of itself been the direct cause of enteric fever. Caldwell has referred to the abuses to which empty mineral-water bottles may at times be subjected. He states that he has seen them used for conveying urine to hospital for purposes of examination. He has also noted them constantly sent back from hospitals without any form of disinfection and again washed by manufacturers in water little better than sewage and he states that it is no uncommon sight to see men drinking out of the mouths of soda-water bottles who may have had certain affections of the lips, mouth, or tongue.

There is no doubt that grave danger may follow the re-issue of bottles used in wards occupied by enteric fever patients or even fingered by enteric convalescents, unless they are properly disinfected. Under regulations now in force in India all utensils used by enteric fever patients for drinking and other purposes are thoroughly disinfected by perchloride of mercury before they leave military hospitals.

Mineral-water bottles are usually unprotected by labels over the top, and owing to the absence of these dirt and dust are very prone to accumulate over the glass-balled stoppers when cases containing bottles are allowed to stand for any length of time. This is a most important source of contamination, as when such bottles are opened the charge of dirt is driven into the interior, and added to this, any dirt left behind is invariably washed out into the glass used, or as men as often as not are unprovided with glasses, they drink out of the bottles, and a lethal dose of enteric fever germs may at any time be unconsciously swallowed. This state of affairs is especially prone to be present in mineral waters purchased in bazaars and railway refreshment rooms, and the only remedy is the use of proper protection by paper labels which should cover the top of the bottles. It may be of interest to note that such labels have been made compulsory in some cantonments in India. It is a popular belief that aerated waters, being charged with carbonic acid gas, are free from germs and that the same care or supervision is not so necessary as is needed in connexion with ordinary drinking water. This is most fallacious and dangerous reasoning as living enteric bacilli have been found in aerated waters as long as 11 days after manufacture (Slater) and infection may thus occur at any time during this period. Hewlett, however, appears

[1] Nos. I., II., III., IV., and V. were published in THE LANCET of Jan. 2nd (p. 62), 9th (p. 134), 16th (p. 197), 23rd (p. 277), and 30th, 1909 (p. 353), respectively.

to think that the bacillus typhosus cannot survive longer than a fortnight in water aerated with CO_2, and for this reason it is perhaps advisable to store soda-water for some time before use in the presence of epidemics of enteric fever. Duclaux states "that to be safe mineral waters should be stored for at least a fortnight before use." Firth found on experiment that "sparklets" used for aeration have no effect with respect to killing enteric fever germs, and as this fallacy is fairly widespread it would be well that the idea of such false security should be dispelled, especially amongst officers on field service manœuvres, shooting trips, etc. In Indian cantonments there is no doubt that regimental mineral-water factories, which are now common, are by far the best and should be encouraged in every way as they are under ideal supervision, both medical and regimental. Factories under private management, however, are often open to grave insanitary abuses and have at times been responsible for sickness on an extensive scale. More especially should attention be directed to mineral waters sold at railway stations, as many cases of enteric fever have been traced to this source of supply; and it is of interest to note that all refreshment rooms at cantonment stations in India have been placed under the sanitary supervision of the military medical officers. Finally, it may be noted that caution should be observed even in cantonments when purchasing mineral waters even when labelled with regimental labels, as bazaar manufacturers frequently purchase and refill empty labelled bottles and even steal regimental labels and use them fraudulently.

As regimental factories are now universal and as they can be kept under medical supervision they should be encouraged. The majority of their plants are of the most modern pattern and each unit usually has its own. So far as possible no mineral waters from other sources [2] should be allowed inside cantonments. Filters of the Pasteur-Chamberland type have been installed in practically all factories for the purification of water, and a sterilising tank is part of the machine in most cases, so that the water is almost invariably boiled or filtered, or in some cases both boiled and filtered, before it is carbonated. In fact, aerated waters from these factories are probably the best, purest, and safest that can be procured in India.

Age.—With the short-service system it is manifestly impracticable to alter the age at which the British soldier arrives in India, although it is absolutely certain that many of the men in each fresh regiment or draft will fall victims to enteric fever. In 1898 (which holds the highest admission record for enteric fever in India), 71·41 per cent. of the admissions for enteric fever, and 73·39 per cent. of the deaths from it occurred among men in their first year of service in the country, and 51·41 per cent. of the total deaths from all causes were caused by enteric fever. Welch truly says that if men were excluded from India up to 25 years of age, enteric fever would form but a very small proportion of the disease returns.[3]

Ambulatory cases.—Ambulatory cases of enteric fever are a very strong factor in the spread of the disease. Some such cases, when they do not report sick, remain out of hospital and may be the source of spreading enteric infection all over barracks.

Bazaars.—Bazaars and their supplies, especially mineral waters already referred to, come in for a large share of condemnation, and of other native products liable to contamination from native sources fruit, lettuce, onions, and other raw vegetables and native sweetmeats may all be mentioned as a possible cause of cases in different stations. There is no doubt that the disease is occasionally contracted by soldiers visiting the bazaars, frequenting eating-houses and drink-shops, &c., but some military medical officers do not think that this is a frequent cause. For instance, at Ambala during the greater part of the first six months of the year 1904 all bazaars were placed out of bounds for British troops on account of plague and, as statistics show, it had no effect in mitigating the disease. Yet enteric fever is ascribed to bazaars in many reports. The reasons given are annually the same—defective general sanitation, polluted water, suspicious food-supplies, bazaar sweets, careless manufacture of aerated waters, etc. Putting the bazaars out of bounds was followed by decreased prevalence of the disease at Peshawar and Poona in 1899. In several cases men admitted for venereal affections developed enteric fever shortly after admission; cases of this kind are reported from Neemuch and cases associated with venereal disease also occurred at Allahabad and Deesa. Two such cases occurred at Rangoon; a man admitted for gonorrhœa at Benares developed enteric fever later; in a case at Belgaum the patient was admitted for primary syphilis on June 29th, enteric fever supervened on July 15th and proved fatal on August 10th; and in another case at Taragarh the disease was changed from soft chancre to enteric fever ten days after admission, while a man admitted at Neemuch for enteric fever was found to be also suffering from venereal sores.

(To be continued.)

[2] Dr. Andrew Duncan in the Practitioner, January, 1904.
[3] Ibid.

BRISTOL.

(FROM OUR OWN CORRESPONDENT.)

Bristol University.

AT a meeting of the committee of Bristol University held on Jan. 29th it was announced that Lord Winterstoke had promised an additional £15,000 towards the University. This, with the £20,000 he had already given, makes Lord Winterstoke's contribution to the fund £35,000. A new movement in connexion with Bristol University College and the proposed new university has recently been set on foot, a committee having been formed, with the Duchess of Beaufort as president, for establishing a hall of residence for women students. Contributions amounting to £775 have already been promised. For a permanent establishment some £10,000 will be needed, though for £2000 temporary accommodation could be found.

University College Union.

On Jan. 29th Sir Robert Ball gave a lecture in the large hall of University College on the Earth's Beginning in aid of the funds of the University College Union. Mr. J. Paul Bush, the president of the union, who took the chair, thanked the lecturer for kindly giving his services to the Union, when Sir Robert Ball replied by saying that he had a direct personal interest in Bristol, as his mother had been a native of the city. The hall was well filled and the lecture, which was illustrated by photographic slides, was highly appreciated. It is hoped that the union may be able to arrange for other lectures on similar lines to raise money for the extinction of an adverse balance of over £200 still remaining on the purchase of the new athletic ground described in a previous letter. The proceeds of Sir Robert Ball's lecture are to be devoted to this object.

Royal Infirmary Extension Scheme.

The committee of the Bristol Royal Infirmary on Jan. 26th received the award of Mr. E. T. Hall, Vice-President of the Royal Institute of British Architects, the assessor appointed to examine the plans for the extension scheme. Mr. Hall reported that 15 sets of designs had been sent in; of these the three selected as best in order of merit were from Mr. Percy Adams of London, Messrs. Henman and Cooper of Birmingham, and Messrs. Thomas Worthington and Sons of Manchester. Mr. Adams will therefore be called to consult with the committee at an early date.

Feb. 3rd.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Royal Infirmary: Annual Meeting.

THE annual meeting of the trustees was held in the board room of the institution on Jan. 27th, the Lord Mayor of Liverpool presiding. Mr. Ralph Brocklebank, the chairman of the committee and retiring treasurer, presented the report of the committee for the year 1908. Referring to the proposed new out-patient department, the report emphasised the necessity of this improvement and addition to existing arrangements. Financial reasons caused the committee to hesitate in this matter. Delay has not been without its reward, for now the difficulties as regards the building have been

cleared away, in the first instance, by the noble gift of £10,000 from the Bickersteth family in memory of the late Mr. E. R. Bickersteth, for many years honorary surgeon to the infirmary, towards this much desired object. That amount has been supplemented by another substantial and several smaller gifts, so that the cost of building and equipment is now assured. For the maintenance of this gift of an out-patient department the committee will shortly appeal to the citizens for support. When the present infirmary was built, some 18 years ago, a maintenance fund of £28,000 was most liberally subscribed, and it was presumably to be spent in 10 years. It has been so carefully husbanded that 18 years have, however, elapsed and there is still one year's contribution to be transferred to the general account. So during 1909, and when the position of the out-patient department is a little more developed, the committee trusts, in response to an appeal, that its friends and supporters will come forward as they always have done and liberally place £25,000 at its disposal as a renewed maintenance fund. The committee expressed its thanks for £3315 contributed and allotted from the Hospital Sunday and Saturday Funds. £340 have been received from grateful patients. The contributions are largely due to the investigation into the means of patients received into the wards, and while the voluntary system is strictly adhered to those who can contribute to their maintenance, particularly patients from a distance, have generally done so. Legacies have amounted to £882, and donations, free of conditions, to £1451. The total receipts were £16,454 and the expenditure £16,947. There is, therefore, a deficiency of £517, increasing the debt of the institution to £3302—not quite a satisfactory statement. The patients treated in the hospital last year numbered 3888 and the out-patients 24,545, while the attendances reached 50,172. Mr. Brocklebank has resigned the treasurership which he has held for 25 years, a matter for deep regret by the committee owing to his untiring zeal and devotion to the interests of the institution. He, however, retains the chairmanship of the general committee of management. Sir William Tate, Bart., was elected president for the ensuing year. Sir Thomas Royden, Bart., the retiring president, was heartily thanked for his donation of £150.

Liverpool Dental Hospital Dinner: Plea for a Chair of Dentistry at the University of Liverpool.

The annual dinner of the Liverpool Dental Hospital and of the Liverpool Odontological Society was held at the Adelphi Hotel on Jan. 30th under the presidency of Mr. Louis S. Cohen, chairman of the committee. Mr. A. Hopewell-Smith, honorary surgeon to the Royal Dental Hospital, London, in proposing "The Hospital and Dental Profession," said that that dinner marked an epoch in the history of the Liverpool Dental Hospital. They were looking back on the past and they were also looking into the future. The Liverpool Dental Hospital was established in September, 1860. During the first year of its work 864 operations were performed in the hospital. Nine years afterwards there were 5421 operations, but last year the number had increased to nearly 27,000. Altogether 680,000 patients had passed through its doors. Next year the hospital would be celebrating its jubilee, and it was a very happy coincidence that that jubilee would synchronise with the inauguration of the new Dental Hospital, the foundation-stone of which was laid a fortnight ago. A jubilee could not be celebrated in a better manner than by entering into a new building intended to carry on in an extended scale the work of 50 years. He would like to see a further step taken, when things had settled down, by the creation of a professorship of dental surgery in the University of Liverpool.

Feb. 2nd.

NEWCASTLE-UPON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

Joint Pathologist to the Royal Infirmary and College of Medicine.

THE fact that the authorities of the Royal Infirmary and the College of Medicine have agreed to appoint a joint pathologist to the two institutions will be received with unqualified approval alike by those who are interested in the work of either institution and by those who are interested in the progress of medical education in the North of England. This decision to appoint a lecturer on pathology in the College who shall also be the pathologist to the infirmary is the outcome of a conference held between certain members of the governing bodies of the College and infirmary. The department of pathology is to be under the control of a joint committee made up of an equal number of representatives from each institution, and I understand that the appointment will be advertised in the medical journals so soon as these representatives are formally appointed, which will be in the immediate future. The wisdom of such a step as this will, of course, be obvious to all familiar with the needs of a teaching department in a college of medicine, and the benefit to the infirmary is bound to be equally great. The astonishing thing is rather that any separation between the College and infirmary should ever have been contemplated, much less allowed to take place. Those who are in a position to know what is best for the future of medical education and for the advance of medical science in Newcastle hope that this is but the first step in a much closer union of the College with the infirmary.

An Interesting Paper on Diphtheria.

A meeting of the northern branch of the Society of Medical Officers of Health was held in Dr. H. E. Armstrong's office on Jan. 20th. The meeting was devoted to the discussion of a paper on Diphtheria by Dr. Andrew Smith which had been read at the previous meeting of the branch. Dr. Smith enjoys an extensive private practice and also holds the official position of medical officer of health of the Whickham Urban District, so that, quite apart from its intrinsic merits, the paper was of considerable interest as embodying the views and experience of a "part time" medical officer of health. Dr. Smith sets out to prove from the results of his own personal experience and that of his brother (Dr. J. W. Smith of Ryton) that the only right treatment of diphtheria is by the use of antitoxin at the earliest possible moment and that the disease will only be eradicated by the isolation of the patient until he is shown by bacteriological examination to be free from infection and by the detection and similar isolation of all infected "contacts." During at least 25 years' experience of diphtheria before the introduction of antitoxin Dr. Smith claimed that they obtained as far as was possible very good results by active local treatment, but even then, and excluding laryngeal cases, from 20 to 25 per cent. of their cases terminated fatally, and with regard to laryngeal cases they were almost always fatal unless tracheotomy were performed, which saved about one-fourth of the cases in hospitals but helped very little in country colliery practice. Taking all varieties of the disease "we were fortunate," he said, "if we got a mortality of much under 50 per cent." Since antitoxin was in general use, he continued, "during the four and a half years of which I have the records there have been notified 120 cases with 12 deaths, which gives a case mortality of exactly 10 per cent.," and on analysing and inquiring into the deaths it was found that in several cases antitoxin was not used at all and in others it was only used when too late to be of any benefit. In the last two years Dr. Smith had seen a considerable number of laryngeal cases, some of them very severe, and all but one had recovered without tracheotomy, and in this case, though the operation was performed within two hours of first being seen, the patient who was *in extremis* never rallied. Finding that the only real treatment of diphtheria is antitoxin, Dr. Smith proceeded to discuss the nature of the action of antitoxin thus: "It is rather preventive of further damage than curative of the damage already done. If a lethal dose of diphtheria toxin has already been absorbed antitoxin can do no good; death will still result. But if a lethal dose has not yet been absorbed antitoxin will effect a cure by preventing all further toxic effects, while the natural curative powers, with what further aid we can confer, will restore the injury already effected." "Such is the teaching of the experimental bacteriologists and when this is tested by clinical experience it is found to be absolutely true." Dr. Smith therefore urged the use of antitoxin at the earliest possible moment in all cases of doubtful sore throat, considering it better to give an occasional unnecessary dose of antitoxin than to risk either death or post-diphtheritic paralysis. And in order that the public may derive the greatest possible good from antitoxin

he advised that early advice should be sought in all cases of sore throat. Some of the objections urged against antitoxin were then dealt with, and with regard to cost Dr. Smith pointed out that the cost of 2000 units is but half-a-crown, "considerably less than what in former days was spent on brandy and other alcoholic stimulants which are now but seldom required," and that while, as judged by the practice of others, 2000 units is a small dose, no results could be better than those obtained by him with this amount administered as a single dose. The latter part of the paper was devoted to a consideration of the methods of prevention. The patient must be isolated until free from infection and infected "contacts" must be sought out and isolated until specific bacilli can no longer be detected in their throats and noses; and the following suggestions were made for the consideration of education authorities. 1. No child notified as suffering from diphtheria to be readmitted until a certificate is received stating that a bacteriological examination has been made and found negative. 2. All other children in the household to be excluded until they can produce a similar certificate. 3. Where a school is believed to be the centre of infection a thorough examination to be made of the children in the school or in one or more class rooms. 4. Bearing in mind the possibility of infection through drinking vessels the utmost cleanliness in the use of such vessels and in other ways to be enforced.

Feb. 2nd.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

West Wales Sanatorium.

IT seemed at one time as though the difficulties connected with the establishing of a sanatorium in the western counties of Wales would never be overcome. There was at first a great lack of sympathy with the project on the part of many local bodies and there was a certain amount of adverse criticism with respect to the objects desired to be attained. It must therefore be a great source of satisfaction to the promotors to find that so much good work has been done during the five months in which the sanatorium has been occupied by patients. In that period 12 persons have been admitted for treatment from Carmarthenshire, 11 from Pembrokeshire, and 7 from Cardiganshire. Of the 10 patients discharged, 4 are said to have been fit for work, 4 were continuing treatment elsewhere, and 2 were unsuitable cases for treatment in a sanatorium. There is accommodation for 12 men and 10 women and in the course of selecting the cases which are most likely to be benefited no less than 30 applicants have already had to be rejected as unsuitable. The cost of the buildings was about £8800, towards which sum only some £400 remain unpaid. The furnishing cost nearly £900 and only £27 have still to be subscribed. A maintenance fund was established by H.R.H. Princess Christian, who both laid the foundation-stone of the building and opened it, and for the current year this already stands at £1672. At the annual meeting, which was held on Jan. 30th, a replica of the Cromwellian cup was presented to Dr. Douglas A. Reid, the medical officer of health of Tenby, who first proposed the establishment of the sanatorium seven years ago and who acted as secretary to the movement for several years. At the same meeting Mr. L. M. Bowen-Jones, the medical officer of health of Carmarthen, and who succeeded Dr. Reid as secretary, was presented with a silver salver.

Teaching of Hygiene to School Children.

A committee of the Monmouthshire education committee has decided to recommend that hygiene shall be taught in the elementary schools of the county and that the subject shall include the proper method of feeding children and nursing. At the end of last year a department was opened in one of the girls' schools under the Newport education committee, having for its object the instruction of girls in domestic economy. In addition to being taught how to go shopping to advantage the girls are instructed in laundry-work, cooking, and other household duties.

Small-pox at Barry.

No further cases of small-pox have resulted from the introduction of the disease into Barry by four sailors on Jan. 12th last.[1] They had all been vaccinated and have made good recoveries.

Tenby Cottage Hospital.

The Tenby Cottage Hospital was established in the year 1871 in large measure through the exertions of the late Dr. J. G. Lock who was medical officer of health of the borough during nearly a quarter of a century. After his death in 1903 his brother endowed a bed in the hospital as a memorial to Dr. Lock. The report of the institution for 1908 discloses a very satisfactory financial condition, the income having been £453 and the expenditure £416. There is accommodation in the hospital for nine patients and during the year 65 persons were admitted to the wards.

Merthyr Hospital.

Reference has already been made[2] to an alteration in the rules of the Merthyr Hospital whereby a body of workmen have now to subscribe at least £50 annually in order to secure the right to nominate five governors on the board of the institution. Formerly every 5 guineas given by the workmen carried with it the nomination of one governor. The men have for some time been agitating to secure the right to be attended when they are in the hospital by any medical practitioner in the town, whether he is on the staff of the hospital or not. The combined subscriptions of the workmen last year are said to have been nearly £1000, but the result of a meeting held on Jan. 27th will probably reduce that sum to barely £300. At the meeting in question it was decided that each of the collieries and works represented should in future contribute only £50 per annum, but that this decision should be reconsidered in the event of the board of management accepting the proposals of the workmen indicated above.

The Brentry Certified Inebriate Reformatory.

The annual meeting of the board of management of the Brentry Certified Inebriate Reformatory, which is composed of representatives of over 20 borough and county contributory councils, was held last week at the offices of the Middlesex County Council, Westminster. The medical superintendent (Dr. David Fleck) in his report stated that the ratio of recovery from the alcoholic habit from statistics kept over a series of years of cases followed after discharge by responsible persons and the "After-care Association," was 43 per cent. Some discussion took place on the recently issued report of the Departmental Committee to inquire into the working of the Inebriates Act and the board was generally of the opinion that most of the suggestions therein contained would prove of value when framed into an Act of Parliament.

The Royal United Hospital, Bath.

The annual meeting of the subscribers of the Royal United Hospital, Bath, was held on Jan. 27th. The medical report stated that during 1908 the in-patients admitted were 1298, against 1318 in 1907. The out-patients numbered 13,765, compared with 12,613 in the previous year. The financial statement showed an excess of expenditure over income of £1020, which was due to a falling off in the amount of legacies. It was stated that a new building for the accommodation of the nurses was in course of erection.

The Health of Honiton.

The medical officer of health of the Honiton (Devon) rural district (Dr. F. M. Reynolds) in his annual report for 1908 states that during the year the birth-rate was 23·2 per 1000; the average birth-rate for the past ten years was 21·8. The death-rate was 13·2 per 1000, which was practically the average for the past ten years; 62 notifications of infectious diseases had been received, an increase as compared with 1907. Dr. Reynolds alluded to the urgent need of an isolation hospital for the district and states that during a recent outbreak of diphtheria he found that isolation in the cottage homes of the working classes was an impossibility.

The Swansea Hospital.

At a meeting of the committee of the Swansea Hospital held on Jan. 27th it was reported that the unfavourable balance against the institution was £4859, which included £1369 on the "building account."

Feb. 2nd.

[1] THE LANCET, Jan. 23rd, 1909, p. 284.
[2] THE LANCET, Jan. 16th, 1909, p. 200.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Municipal Sanatorium for Dundee.

ON Jan. 26th, at a meeting consisting of the Dundee public health committee, medical practitioners, representative clergymen, and a deputation of working men, the proposal to acquire the Sidlaw Sanatorium for Consumptives at an initial cost of over £12,000 was approved, and a committee was appointed to carry the scheme through. Dr. R. Sinclair said that it was his opinion, and he understood that of his colleagues, that the sanatorium should be municipalised, and Dr. Alexander Campbell said that consumption could only be successfully coped with through compulsory notification. He was convinced that if they tackled consumption early, in the course of 10 or 20 years they would be able to look upon it in the same way as they now looked upon typhus fever or small-pox. At the meeting compulsory notification was also decided on.

Accident to a Medical Man at Forgue.

While Mr. A. M. Davie was driving to Bridge of Forgue on Feb. 1st his horse shied from some cause and both Mr. Davie and the driver were thrown from the vehicle. The driver escaped with a few scratches, and though Mr. Davie was more seriously hurt it is hoped that no untoward after-effects will result.

Presentation to a Dundee Practitioner.

Dr. J. S. Y. Rogers, who has been medical attendant to the Dundee football club for five seasons, was on Jan. 23rd presented by the directors of the club with a silver cigarette case. The presentation was made by Bailie Robertson and Dr. Rogers suitably replied.

Aberdeen Trades Council and Infirmary Contracts.

At a meeting of the Aberdeen trades council held on Jan. 27th the chairman stated that the executive committee had been considering the question of the infirmary directors giving the contracts of that institution to firms paying the standard rate of wages. The directors, he pointed out, had already given two of their contracts to "unfair" firms. As the infirmary was largely supported by contributions from the working-classes he (the chairman) thought that the first consideration of the directors would have been to give their contracts to firms paying the standard rate of wages. The executive committee, he might add, had come to the conclusion that some action should be taken in the matter and it recommended that a deputation from the council should wait upon the directors for the purpose of discussing the question with them. This recommendation was unanimously agreed to and a deputation was appointed.

Death of Miss J. A. Galloway, LL.D.

Those interested in the higher education of women, and in a more special sense those who are associated with the University of Glasgow, have sustained a great loss in the death of Miss Janet Ann Galloway, LL.D., honorary secretary of Queen Margaret College. Her death occurred with startling suddenness last week. In 1877 Miss Galloway was one of the founders of the Glasgow Association for the Higher Education of Women, the object of which was to offer to women as far as possible teaching similar to that given to men by the universities. From that point to the foundation of Queen Margaret College, and at a later date its incorporation into the University, Miss Galloway was the mainspring of the movement. The important part that she has played was recognised by the Senate of the University of Glasgow when in 1907 it conferred upon her the honorary degree of Doctor of Laws. To many lady medical graduates of the University of Glasgow the death of Miss Galloway will cause a feeling of deep personal loss, for in every way she strove to become the friend of all the students who attended the classes at Queen Margaret College, of which up to the time of her death she was honorary secretary.

Feb. 3rd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

A Mother and Daughter in Receipt of Old Age Pensions.

THE Old Age Pensions Act has had the incidental effect of bringing prominently before "the public eye" many interesting facts connected with longevity and sanitary conditions which would otherwise have passed without notice. The hereditary quality of specially prolonged life is an item worthy of the attention of disciples of Mr. Francis Galton. The frequent display of centenarianism in association with the poor—and practically vegetarian—diet of the tenant of the Irish mud-wall hut, with associated daily exposure to all vicissitudes of atmosphere and season, proves how useless is self-indulgence in the production of a hale old age. One of the rarest items of the record registered by the working of the new Act is of the simultaneous receipt of the pension by parent and child. And of this exceptional state of things our Dublin, muddy streets, eternal mist, and high mortality notwithstanding, has furnished one of the few specimens. The mother is aged 95 years, and her daughter has just passed the qualifying limit of 70. A special feature of the case is the fact that the evidence of the mother's age is the birth certificate of the daughter. And although born in the country (County Carlow) and long resident therein, the mother's migration to the less pure urban atmosphere did not affect her health, and she has resided in the same house for the past 40 years and over. Her 13 children all still survive and she has some 25 grandchildren. She is in full possession of her faculties; her hearing is good and she does not use spectacles. She enjoys her meals thoroughly. Her philosophy of life is simple: "The way to live long is to trust God and never to worry about anything. I have never been sick in all my long life and never took an ounce of medicine."

"Slainte": the Journal of the Women's National Health Association.

Slainte (*Health*) is the title of the new magazine devoted to the diffusion of a knowledge of health, hygiene, &c., in popular form, to be conducted by Lady Aberdeen, as the official organ of the Women's National Health Association. According to the announcement, the intention is to make the magazine thoroughly adapted to the peculiar needs of the Irish people, and the prevailing maladies and exceptional conditions of this country are to be kept specially in view and thoroughly dealt with. Helpful articles and advice for those engaged in the work of combating disease are promised as a constant feature of the periodical. The opening issue has its "Foreword" and "Notes" by the editor and an article on the results which have been obtained in the "home treatment of tuberculosis," by Dr. Joseph Pratt, of Boston, U.S.A., illustrated with reproductions of photographs showing sleeping-places which have been contrived for tuberculous patients on the roofs and in the yards of tenement dwellings. There is also an article on "What the Women's National Health Association can do to Advance the Cause of School Hygiene" (by Mr. T. O. Clarke, LL.D.); another entitled "Account of the Babies' Clubs of Belfast"; and a short story. Each number is to produce a record of work done by including the reports of the various branches of the association. An "Answers to Correspondents" column will necessarily form a distinctive and prominent feature and will prove a great boon to the amateur inquirer after technical knowledge of disease and its treatment, who is so usually at a loss for trustworthy information and guidance. *Slainte* will be issued monthly and at the modest price of 1*d.* so as to place it within the ready reach of the suffering poor, for whose benefit it is specially intended.

The Newtownards Nursing Society.

At the sixteenth annual meeting of this society, held on Jan. 26th in the town-hall, Newtownards, Professor J. A. Lindsay gave an interesting address on the Necessary Conditions of a Healthy Community, which he treated under the following heads: a suitable site, a stock of average soundness and vigour, healthy houses, a pure and adequate water-supply, a suitable food-supply, proper sanitation (domestic and urban), the regulation of trades and employments, proper school buildings, and medical inspection of schools and scholars, temperance, suitable arrangements for the care of the sick and for the isolation of infectious disease. A very hearty vote of thanks was passed to Professor Lindsay for his address.

The Accommodation for the Tuberculous in Belfast.

The Whiteabbey Sanatorium committee sent in a report to the Belfast board of guardians on Jan. 26th, recommending that in consequence of the report of the medical officer as to the increase in the number of consumptive patients seeking admission two additional pavilions should be erected, one

for males and one for females. On Jan. 10th there were 111 consumptive patients under treatment in the union workhouse in addition to 266 at the Whiteabbey Sanatorium, while on Oct. 26th, 1908, there were only 51 under treatment in the workhouse. The adoption of this report having been put before the guardians, an amendment deleting the suggestion to build new pavilions was carried by 17 to 13, on the ground that "the responsibility for the consumptives was one for the public health authorities and not for the guardians."

Feb. 2nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Carbon Monoxide Poisoning.

AT a recent meeting of the Hospitals' Medical Society M. Hirtz described the nervous symptoms which he had found in a patient accidentally poisoned by lighting-gas and brought in a state of coma to hospital. These were a diminution of sensibility, exaggeration of the Achilles reflexes, and an extensor response of the great toe. Respiration was regular, the pulse was 68, the arterial tension normal, and their was neither albumin nor sugar in the urine. On lumbar puncture a clear liquid with no abnormal elements was obtained. The reflexes rapidly became normal and the patient recovered. The symptoms were spinal and not meningeal and M. Hirtz has generally observed them in cases of poisoning by carbon monoxide gas.

The Vital Statistics of France: Improvement in the Birth-rate.

Henceforth the statistical bureau intends to publish the variations in the French vital statistics every six months instead of once a year only. The figures for the first half of 1908 compared with those for the same period in 1907 have just been issued. During the first six months of last year the situation notably improved. Instead of an excess of 55,007 in the deaths as was registered in the first half of 1907, in the same period of 1908 an excess of 11,066 births over deaths was registered. This result is chiefly due to a diminution in the deaths, the number of which has fallen from 457,752 to 399,336, but owes a good deal to the increase in births, the number of which has risen from 402,475 to 411,402. An increase of 8927 births for the whole country in 12 months affords great cause for gratification, as it was unhoped for after the figures of recent years.

The Effect of "Cardio-abdominal Massage" on the Work of the Heart.

At the Therapeutical Society on Jan. 13th M. Cautru gave it as his opinion that "cardio-abdominal massage" afforded excellent results in affections of the heart and vessels by regulating the central and peripheral circulation in cases where there was excessive or diminished tension. By employing André Lagrage's method it is easy to determine its effects, which are—diminution of the work of the heart and of the arterial resistance in patients with increased tension and compensatory increase in the heart-force when the tension is too low.

The Transmission of Tuberculosis by Books used by Tuberculous People.

At the Biological Society on Jan. 16th M. Lesné and M. Cawadias reported that they had determined by experiments that it was impossible to infect guinea-pigs with tuberculosis through the medium of printed matter. Koch's bacillus was discovered in these books and the fact of their non-infectiveness is striking. If these experiments can be applied to the human subject it must be admitted that only under very special conditions could tuberculosis be spread by means of books.

The Use of Colloidal Silver in Puerperal Infection.

M. Theuveny has been treating puerperal infections which have resisted the usual methods of treatment by preparations of colloidal silver. After using successively collargol pomades and intra-uterine injections of collargol solutions, of electrargol, and of non-isotonic colloidal silver, but without success, he thinks that the only hope of obtaining good results is by intravenous injections of solutions of electrargol or of silver in the non-isotonic colloidal state.

Feb. 2nd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Value of Serum Diagnosis in Syphilis.

BEFORE the Verein für Innere Medicin Professor Blaschko read a paper on the Clinical Value of Wassermann's Reaction in Syphilis. He reported that Wassermann's reaction had been tried by him in 900 cases of syphilis, the result being that generally the reaction was in accordance with the clinical symptoms, except in 30 cases giving a negative reaction, notwithstanding mild but characteristic symptoms. In syphilis of the bones and of the brain the reaction was sometimes negative. Concerning the influence of anti-syphilitic treatment on the reaction the report stated that only in 15 cases no influence was visible, whilst in 76 carefully examined cases the reaction gradually disappeared, sometimes together with the administration of specific compounds, sometimes after the end of the treatment. In certain instances where the syphilitic symptoms had disappeared without specific treatment the Wassermann reaction became negative also. The reaction may, however, reappear sometimes with, sometimes without the reappearance of clinical symptoms. It is extremely rare that the reaction continues negative; in the great majority of cases this is only transitory. Professor Blaschko is of opinion that a positive reaction means always the existence of some latent syphilitic process even if clinical symptoms are not visible, and he argues that the treatment should be continued till the reaction becomes negative. He recommends that in every case of syphilis an examination of the serum should be made at regular intervals. As regards the prognosis, the reaction is of no importance for the first two years after the infection, but later the prognosis is much better in cases where the reaction is positive. In the discussion Dr. Halberstädter remarked that Wassermann's reaction proved positive in some cases of scarlet fever; the reaction appeared about a fortnight after the exanthema and remained positive for about three months.

The Treatment of Enteric Fever by Collargol.

Dr. Mironescu of Bucharest (Roumania), writing to the *Berliner Klinische Wochenschrift*, reports the results obtained in treating enteric fever by enemata of collargol. He said that enteric fever is not, as it was formerly believed, a mere disease of the intestines but a septicæmic condition. Collargol as a specific against septicæmia had been tried in enteric fever, but the results were not satisfactory because the doses employed were too small. By administering the compound in enemata larger doses could be given. The patients received daily from one to two enemata of 5 grammes of collargol dissolved in 100 grammes of water. Previously to the administration of collargol a water enema was given to wash out the intestine. If the collargol enema were not retained, the collargol was administered by the mouth in the form of capsules. The success of the oral method of administration was, however, less marked than that of the enemata. 17 cases were treated in this way, the result being that the treatment had a good influence on the temperature, the general nutrition, and the duration of the disease, and complications did not ensue. The temperature does not fall suddenly but is raised sometimes after the first doses, falling on the following day. A sudden fall of temperature occurs only in cases where the treatment is begun in a late stage of the disease, just as is the case in treatment by quinine, pyramidon, &c. Comparing the cases treated by collargol with those treated by cold baths, Dr. Mironescu stated that in the latter category fever was present for from 10 to 15 days longer. Some complications were totally absent, e.g., hæmorrhage, whilst this complication happened in one-third of the cases treated at the same time by other methods. It is remarkable that the number of leucocytes, which is generally under the normal in enteric fever, becomes normal after a collargol enema. In one case with 4000 leucocytes their number was increased to 7000 after the first enema. No fatal issue occurred in the 17 cases treated by collargol; there were four deaths amongst the 17 cases treated at the same time by other methods. Dr. Mironescu concluded by strongly recommending the administration of from 5 to 10 grammes of collargol as preferable to the treatment by cold baths. Both methods may, however, be combined.

Lumbar Anæsthesia in Abdominal Operations.

Bier's method of lumbar anæsthesia—i.e., the injection of anæsthetics in the lumbar portion of the subarachnoid cavity—continues to be discussed by surgeons, and opinion still differs not as to its efficacy but as to its advantages compared with chloroform and its after-effects. In a recent number of the *Deutsche Medizinische Wochenschrift* Professor Hollaender of Berlin mentions some disadvantages of the method which show that it is not always trustworthy. Sometimes the cannula has to be introduced in several places and in one case it was found impossible to introduce it into the subarachnoid space. In certain instances the anæsthesia occurred very late, in one case only after three-quarters of an hour, and in others the anæsthesia began to disappear before the end of the operation. Notwithstanding these drawbacks the advantages of the method are obvious. One of the most striking facts is the avoidance of the paresis of the intestines so common after anæsthesia by chloroform, a fact especially valuable in laparotomies. The increased tonus of the intestine is obviously an effect of the injected adrenalin; in some cases the tonic effect produced intense peristaltic movements. This is a great advantage for the patients, especially in non-suppurative cases. Sometimes the bowels have moved freely during the operation; the patients as a rule felt much better after the operation than might have been expected had they been anæsthetised by chloroform.

Feb. 1st.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

"Ira la Perduta Gente."

DANTE'S awe-inspiring words might fitly be inscribed over the collapsed cities, among the ruins of which the excavator is at work clearing away débris and recovering treasure under military surveillance. To facilitate the operation "*permessi*" (permits) have been granted to persons acquainted with the cities and directly interested in the work, and, *pari passu* with these, the prophylactic corps, armed with disinfectants constantly replenished from depôts constructed round the city zone, is minimising all danger from the effluvia, partly cadaveric, partly telluric, still exhaling from below. In Messina alone that corps now numbers 140 men. Meanwhile "*baracche*" (huts) are being multiplied on the most approved plan over the region of disaster, so as to accommodate not only the excavating and disinfecting contingents but also such of the survivors as have yet to find board and lodging in the towns throughout the kingdoms, in the island or on the mainland.

A Supposed Survivor Relieved "Malgré lui."

At the railway termini of all the towns there is always in waiting for the groups of survivors coming by special train a local committee, often consisting of ladies only, whose attentions are as gratefully received by the said survivors as they are promptly and effectively vouchsafed. Sometimes, however, the attentions are (unwittingly of course) misapplied—as occurred at the central station of a great city a week or two ago. The train with its relay of meanly clothed, semi-starved, half-dazed survivors had just steamed in and was discharging its inmates on the platform when one of these, a shabbily dressed, gaunt-looking little man, was forthwith seized by a couple of masterful ladies who (not knowing his language) gave no heed to his representations, but, having poured brandy-and-water down his throat, proceeded to reclothe him from head to foot. By the time they had rehabilitated him they were joined by another of their party who understood Italian and who ascertained from the man that he was no "survivor" at all, had never been either in Sicily or Calabria, but had simply found a seat in the train a few stations before reaching the terminus! Adventurous urchins even have been known to play truant and to join a party of "survivors" till, after a good day's journey, a square meal at the terminus, a new suit of clothes, and a gift of money, they got back to their parents and to their companions, more exultant than penitent over their escapade. These cases, however, are but few, and, all things considered, detract nothing from the admirably prompt, intelligent, and efficacious relief applied to thousands of most deserving objects.

The Hospital and the Lazzaretto.

The King and Queen have nobly followed up the initiative they took in the work of rescue and rehabilitation and now in Rome are paying frequent visits to the various hospitals and "ricoveri" already filled with Calabro-Sicilian patients. Nor is the Pope behindhand in the same cause, so far as his peculiar circumstances admit of it. But, be it remembered, he is compelled by Vatican policy to pose as a prisoner—a prisoner, as has been said, "with doors locked on the inside"—and to show and to administer by proxy the sympathy and the relief he would gladly do *in propriâ personâ*. The "Lazzaretto di Santa Marta," started by Leo XIII. on the occasion of the cholera epidemic of 1884, is indeed within the precincts of the Basilica of St. Peter, but how to get there (a journey of not many minutes) without setting foot on Italian soil and so breaking the rôle of prisoner was an insuperable difficulty to him as it now is to his successor. True, it is said, he might use the *cavalcavia* (archway) of Charle Magne, which connects St. Peter's with Santa Marta; but even this subterfuge has been denied him, and so the good Pontiff has to bow to *force majeure* and to assure himself by daily reports as to how the patients he is relieving fare at the hands of their attendants. And, indeed, his action was as prompt as it was effective the moment the Calabro-Sicilian cataclysm became known. He had the "lazzaretto" of Leo XIII. fitted up with 400 beds, the surgical rooms thoroughly equipped and put in order, and the pharmacy replenished and provided with the requisite *personnel*. The princely rooms placed at his disposal by the faithful he has distributed with equal judgment and impartiality, and, resisting the temptation to rebuild or temporarily to construct places of worship in the earthquake-visited region, he has through Cardinal Lualdi, Archbishop of Palermo, and Monsignor Morabito, Bishop of Mileto, subsidised the deserving survivors, while providing for those of them who had suffered from physical lesions in the improvised lazzaretto. Indeed, a large number of those whose case came under the rubric of "minor surgery" were simply reclothed, temporarily housed, and supplied with money so as to leave the lazzaretto free for the more gravely injured, while these latter, as soon as they are in a condition to go out, are at once replaced by fresh arrivals. And so the quondam "Ospizio di Santa Marta" bids fair to rival its older sisters on either side of the Tiber, what with the clinical skill of its professional staff, the assiduity and intelligence of its nurses, and the up-to-date quality of its material equipment.

Jan. 31st.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

Sanitary Conditions and Epidemics.

ALTHOUGH the new Turkish Parliament is proceeding with energy and circumspection and the political horizon is clearing, social, municipal, and sanitary conditions in Constantinople and the provinces are very far from being satisfactory and occupy the minds of the respective authorities in a most serious manner. In the metropolis itself there is a great outcry on all sides for the immediate improvement of the deplorable hygienic state of the city. To begin with, the antiquated mode of refuse disposal which has been practised here from time immemorial in a desultory fashion needs to be done away with—the sooner the better. There have never been strict regulations in this matter. Everybody is allowed to do as he or she likes. People throw out their refuse at any time of the day or the night, either at their door or in the middle of the street. The so-called "chopchis," whose duty it is to remove it, come with their baskets and horses not at regularly appointed times but whenever it pleases them. Refuse is therefore very frequently allowed to remain in streets and thoroughfares and in front of private houses for a long period of time, obstructing communication and polluting the atmosphere in a most objectionable manner. In some districts waste matter of every description remains exposed the whole day long and is not infrequently left altogether to foul and to contaminate the air and water

sources. The innumerable street dogs, the scavengers of Constantinople, are seen wallowing in it and scattering it in all directions. The great evil that results from such a deplorable state of affairs can easily be imagined. Epidemics of enteric fever have become quite a regular condition, recurring with alarming persistency and frequency, in many places of the city. The exceedingly bad pavements of the streets, the pools of stagnant water and mud, and the open drains increase the evil in a very marked degree. Nor are the sanitary conditions better in the provinces, but, if possible, worse. Thus recent reports from Jaffa and Adrianople describe the hygienic state of matters there in most gloomy colours. In the first-named town, especially in the quarter Menchié, large quantities of waste matter remain in the streets in a state of decomposition. A similar state of things exists in Adrianople, where small-pox carries off numerous victims from among the Turkish and Jewish sections of the population. To all this has been lately superadded the great scourge of starvation, with all its horrible consequences, now raging in many parts of Anatolia. From Beirut comes the news of an outbreak of bubonic plague. A woman whose husband had suddenly died was admitted to the French hospital in a collapsed state. She died soon afterwards, and two nurses who attended her rapidly succumbed one after another. But happily the medical authorities did not fail to realise the nature of the disease and strict sanitary precautions and measures to stem it were taken.

Earthquakes.

From Smyrna, Samos, and Scio comes the news of extensive earthquakes which have caused considerable damage to property and have resulted also in loss of human lives. This was especially the case at Phocea and Menemen.

Jan. 30th.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

Rat Plague in Shanghai.

Dr. A. Stanley, the medical officer of health of Shanghai, has reported to the municipal council that plague had been found to exist among the rats in the settlement. At the end of last November a death from plague occurred at Hankow (600 miles distant from Shanghai up the Yangtze river) in circumstances which pointed to the disease having been contracted in Shanghai though no cases of plague had been reported or suspected in that latter place. Without waiting for any outbreak of human plague Dr. Stanley, acting on the belief that an epidemic of it is brought to a port by plague-infected rats and also on the fact that Shanghai is in frequent touch with plague-infected ports, made arrangements for a laboratory examination of all dead rats found by the sanitary coolies during the collection of house to house refuse, especially from those houses in the neighbourhood of the wharves. Out of 228 rats examined 17 were found to be infected. Although the inspectors were acquainted with the importance of reporting any unusual mortality among rats no such reports had been received. Nevertheless, as a result of the examination, in order to be as much as possible in front of human plague, the following preliminary regulations have been put into operation: (1) Collection of dead rats throughout the settlement and routine bacterial examinations in the laboratory so as to locate cases of plague among rats; (2) the organisation of rat brigades with the object of destroying rats and rendering as far as possible houses and drains rat-proof, especially in infected areas; and (3) the preventive inoculation with plague vaccine of the sanitary staff and of the public where there appears to be special reason for it. With regard to the epidemic at Tongshan mentioned in previous letters, it is interesting to note that although the temperature in North China now averages about 20° minimum and 35° maximum, and the atmosphere is extremely dry, rats are still being trapped that are plague-infected (to the extent of 1 per cent.) although the epidemic of human plague has quite died down. Dr. Moorhead of Tongshan informs me that some of the rats, apparently well for days without any sign of glandular enlargement during life or any evidence of disease on post-mortem examination, are found to have plague bacilli in their spleens—evidently immune to infection. It has been found at Tongshan that rats trapped in the mines are less readily infected experimentally than the rats caught in houses, though both of the same species.

Morphine in Anti-opium Pills.

The forthcoming Shanghai Commission, it is hoped, will look upon this as one of the most important subjects for its deliberations, at any rate the question of nipping the morphine habit in the bud in China is one which will have to be faced. At present the case practically amounts to this, that the more opium smokers who try to cure themselves by taking anti-opium pills the greater becomes the number of morphine eaters, for it is a sad fact that over 90 per cent. of these so-called anti-opium preparations contain morphine, including even those issued under the official cognisance of the Imperial Government's Anti-opium Bureau.[1] To show the extent to which morphine enters into the composition of these pills the following analysis has been made and discloses rather a serious state of affairs, especially having regard to the insidious way in which a man is induced to become a morphine eater. For comparison a determination of morphine in a sample of Chinese opium was made and this gave 21 per cent. moisture and 8·4 per cent. morphine in dry powder or morphine in opium 6·64 per cent. Of five sample bottles of pills purchased in the open market, one of which was shown by the characters on its wrapper to be authorised by the anti-opium bureau, morphine was present in all.

In Sample No. 1 there was 4·8 per cent. of morphine.
" " " 2 " " 5·8 " "
" " " 3 " " 0·6 " "
" " " 4 " " 8·7 " "
" " " 5 " " 1·7 " "

Sample No. 3 probably contained opium itself, but the others would appear to have the narcotic present in the form of morphine. To put it more graphically, if we take the mace, which is equivalent to one drachm, as the standard measurement: In Sample 1, 1·50 mace weight of pills contains as much morphine as 1 mace of Chinese opium; in Sample 2, 1·26 has the same proportion; in Sample 3 it requires 13·75 mace; in Sample 4, 0·84 mace; and in Sample 5 it requires 4·28 mace to yield as much morphine as 1 mace of opium. These pills were all bought in Peking and their sale is extending steadily. When a smoker makes up his mind to get rid of the craving he does not find it very difficult to supplant it by a regular dose of pills instead of a pipe. I have met several cases of men who say they have cured themselves and have now no desire to smoke but who have settled down to a chronic indulgence in pills. To show how readily morphine may be smuggled into China one has only to quote the returns of the Imperial Maritime Customs for the past few years. The import in 1903 was 108,564 ounces; in 1904, 128 ounces; in 1905, 54 ounces; in 1906, 419 ounces; and in 1907, 96 ounces. As our Commercial Attaché here (Sir Alexander Hosie) has noted in his last annual trade report, "these are, of course, the Customs returns, but it would be foolish to imagine that the figures given since the year 1903 represent the real import. The restrictions now placed on this trade and the high duty have undoubtedly led to smuggling."

Peking, Jan. 13th.

Obituary.

GEORGE EASTES, M.B. LOND., L.R.C.P. LOND., F.R.C.S. ENG.

THE death of Mr. George Eastes, which we announced last week, has removed one of London's most distinguished general practitioners, who gave freely of his time and ability for the welfare of the profession of medicine. Our readers may remember that we had the pleasure of supporting his candidature for last year's election to the Council of the Royal College of Surgeons of England, and the fact that he only missed a seat upon it by 11 votes was a source of great gratification to him. At that time there was no indication

[1] The presence of morphine in 75 per cent. of some pills purchased at different shops in Shanghai by our correspondent was proved on making an analysis of these "anti-opium cures" in THE LANCET Laboratory. An article on the results obtained appeared in THE LANCET of Jan. 2nd, 1909, p. 56.—ED. L.

that his days were numbered, but recently he had suffered from dyspnœa, with attacks of thoracic pain, and in one of these attacks he died quite suddenly on Jan. 23rd at his residence, having been out on the same morning to visit his patients.

Mr. Eastes was born in May, 1841, at Folkestone, of which town his father, the late Mr. Silvester Eastes, M.R.C.S., J.P., was mayor. It is interesting to recall that Folkestone numbers amongst its chief worthies William Harvey, and George Eastes always held in the greatest reverence the memory of the Father of English medicine, with whom he was connected by the ties of a common birthplace. The statue of Harvey upon the Leas, which is familiar to every visitor to Folkestone, is a memorial to Eastes's enthusiasm, for its erection in 1881 was almost entirely due to his energy in obtaining subscriptions and awakening interest amongst the people of the town where he himself was first introduced to the study of medicine. This was in his father's surgery in his sixteenth year, after he had received a general education at St. Margaret's, Tonbridge, and at Maidstone Grammar School. In the fourth year of this apprenticeship he proceeded to Guy's Hospital and matriculated at the University of London. In 1864 he qualified L.R.C.P. Lond. and became house surgeon to his hospital, after which he went to Paris for six months' hospital work. Returning to Guy's Hospital he became surgical registrar and tutor, took his London degree in 1866 and the diploma of F.R.C.S. Eng. two years later. He had a distinguished hospital career and gained the special notice of the late Mr. Hilton. In 1868 also he started upon his 40 years of general practice in the West End of London, and in the next year he married Fanny Elizabeth Friend of Hambledon, who, with one son and two daughters, survives him. During his hospital days he formed firm attachments with many prominent Guy's men, which were only severed by death. With some of them he was associated in "The Guyite Club, 1863," a body which still exists and of which he was secretary until his death. He formed much larger and no less loyal ties with his medical brethren through the British Medical Association, of which he was an honoured member. Between 1886 and 1903 he held the offices of secretary, treasurer, and president of the Metropolitan Counties Branch which he represented on the Council of the Association until last July. He was an industrious committeeman and an active member of the editorial staff of the *British Medical Journal* for some 30 years. The shrewdness and justice of his counsels gave him a voice of much authority in the policy of the Association. Besides conducting a busy practice he was surgeon-accoucheur to the Western General Dispensary for 14 years and anæsthetist to the Great Northern Central Hospital. His interest in anæsthetics was great; he was a founder of the Society of Anæsthetists and was mainly responsible for the first report of the British Medical Association Committee on Anæsthetics, a report which entailed a large amount of patient work, typical of the man who never spared himself in the interests of others. He was a member of the Royal Medical and Chirurgical, Clinical, Obstetrical, and Harveian Societies, and president of the last-named body in 1895.

Dr. E. B. Forman sends this personal appreciation: "My acquaintance with George Eastes dates from nearly half a century ago when we were students together at Guy's. His excellence as an anatomist soon marked him for distinction and he was regarded as one of the most brilliant men of his year. When he was appointed surgical registrar and tutor we all hoped he would remain long enough at the hospital to be placed on the permanent staff. ..... A better friend, a more genial companion no one could have. His bright, humorous manner made him a great favourite, and more than 40 years' friendship only deepened the first impression of his goodness of heart. It is difficult to enumerate all his good qualities, amongst which one must not forget his great literary ability, but his greatest gift was friendship."

A memorial service was held at Christ Church, Lancaster Gate, on Jan. 27th, and was attended by a large number of his old friends and colleagues. The interment was performed at Folkestone upon the same day.

THOMAS JOSEPH PATRICK HARTIGAN, F.R.C.S. ENG.

Mr. T. J. P. Hartigan, who died in Devonshire-street, Portland-place, London, on Jan. 25th, was born in India, his father being an officer in the army. His parents were of Irish nationality and he was educated for the medical profession at the University of Dublin. He remained some time in the Irish capital, but in 1883 he went to Edinburgh where he attended the medical classes, and after the usual curriculum qualified as L.R.C.P., L.R.C.S. Subsequently he proceeded to Liverpool where for a time he was resident medical officer at the fever hospital. He then became surgeon on board ship and travelled extensively. Returning to England, Mr. Hartigan settled at East Grinstead in Sussex where he quickly established an extensive practice. In 1899 he became F.R.C.S. Eng. In 1901 he took the Diploma of Public Health. Still Mr. Hartigan found time to take a very prominent part in the public and political life of the town of East Grinstead and the surrounding district. He was appointed in 1894 medical officer of the workhouse and No. 1 district. He represented the town on the East Sussex county council, of which he was a member of the sanitary committee, and in 1899 he was elected to the East Grinstead urban council, of which he became chairman two years later. A Liberal in politics, Mr. Hartigan was vice-chairman of the local party. In 1903 he left East Grinstead for London, where he held a number of appointments, including surgeon, pathologist, and medical officer in charge of the light department at the Hospital for Diseases of the Skin at Blackfriars, and dermatologist at the Alexandra Hospital, Queen-square. The funeral took place on Jan. 29th, the deceased's remains being interred in the burying ground adjoining the Franciscan Monastery at Crawley, Sussex.

WASHINGTON LAFAYETTE WINTERBOTHAM, M.B. LOND., M.R.C.S. ENG., L.S.A., J.P.

Dr. W. L. Winterbotham who died at his residence, Bridgwater, on Jan. 23rd, received his medical education at University College Hospital, London, and after obtaining the M.R.C.S. Eng. and L.S.A. qualifications in 1859 and 1860 respectively graduated M.B. Lond. in the latter year. After holding a resident appointment at University College Hospital Dr. Winterbotham commenced practice at Bridgwater. He was shortly afterwards elected on the honorary staff of the Bridgwater Infirmary and was at the time of his death consulting medical officer to that institution. Dr. Winterbotham had a keen sense of public duty, for not only did he show an active interest in all local matters connected with Bridgwater, of which borough he was one of the first representatives on the Somerset county council, but he was also Surgeon-Major in the Somerset Light Infantry (Volunteers). He was for many years an active member of the Somerset Archæological Society. Dr. Winterbotham had been one of the best known medical practitioners in Bridgwater and the neighbourhood, but since taking a partner some years ago he had not actively pursued his profession. He was a past president of the West Somerset branch of the British Medical Association, and on the commission of the peace for the county of Somerset. It was mainly due to Dr. Winterbotham that the scheme for the erection of the bronze of Admiral Blake at Cornhill, Bridgwater, was carried out successfully, Lord Brassey performing the ceremony of unveiling the monument about nine years ago. Dr. Winterbotham, who was nearly 70 years of age, will be greatly missed in Bridgwater. He was highly esteemed and had been connected with the life of the borough for a large number of years. His wife died several years ago and he leaves one son and four daughters.

THOMAS LAURENCE READ, M.R.C.S. ENG.

Thomas Laurence Read, whose death occurred on Jan. 28th, was intimately associated with Kensington all his life. His father, who was a member of the medical profession, practised there, and there he was brought up. He studied his profession at St. George's Hospital, and after he qualified in 1856 joined his father until the death of this latter in the "sixties" when he succeeded to the whole practice. He removed to the Queen's Gate district, where he rapidly acquired a large and lucrative connexion, in which he was fully engaged when he died from sudden cardiac failure. Such, briefly, is Read's professional history. He did his work quietly and unostentatiously, spending his days in the arduous duties of his profession, daily affording relief to the suffering, and soothing the path of the sick and dying. It is to such as those that the words of Esther Summerson when speaking of her husband in

"Bleak House" apply: "I never walk out with my husband but I hear the people bless him; I never go into a house of any degree but I hear his praises or see them in grateful eyes; I never lie down at night but I know that in the course of that day he has alleviated pain or soothed some fellow creature in the hour of need. I know that from the beds of those who were past recovery thanks have often, often gone up in the last hour of his patient ministrations." Mr. Read was a family practitioner of the best type. Able, shrewd, and trustworthy, he was a man possessing the invaluable attributes of insight and sympathy, and identified himself with the true interests of his patients, whose confidence he possessed in an unusual degree. An acute observer and soundly informed in medicine, he was well able to select and to weigh the expert advice which he desired to obtain for his patient in any difficulty. He was well in touch with modern methods, being a frequent attendant at the meetings of the Royal Medical and Chirurgical Society, of which he was a member of Council. He took an active and an interested part in the formation of the Royal Society of Medicine and was a member of the committee of organisation, and also up to the time of his death of the council of the society. The great characteristic of Mr. Read which endeared him to his patients was his cheery optimism; his smiling face, his sympathetic manner, and his hopeful view of things were "better than a dose of physic." He was warmly esteemed and admired by all who knew him for his kindly nature and his genial manner, and if his memory is not associated with any great discovery, it will be held in respect by all those who can appreciate a useful professional life of more than half a century, and he will be mourned by many a patient and friend.

JOHN JOSEPH MURPHY, L.R.C.P. EDIN., L.R.C.S. EDIN., L.A.H. DUB., L.M. DUB.

ONE of the most popular practitioners of Dublin died at his residence, 18, Harcourt-street, on Jan. 23rd. John Joseph Murphy was a native of the County Carlow, where he was born, near Bagenalstown, 69 years ago. He received his arts education in the Roman Catholic College at the town of Carlow, and it was decided by his family that he should enter the priesthood, but while at Maynooth he decided on a change of course and the adoption of medicine as a life career. His success justified his choice from the beginning and latterly his consulting-room was always besieged, so that it was one of the *on dits* of the profession—and Dublin public—for a long series of years that "Dr. Murphy wrote more prescriptions than any other doctor in Dublin." His social success was equally remarkable, while as a devout Roman Catholic he was closely associated with the religious bodies of his Church. He was the medical adviser of the Passionist community, Saint Paul's, Mount Argus; and of the Sisters of the Poor Clares' Convent, Harold's Cross. And in the unceasing rush of professional life he found time to contribute various items to current medical literature—every one of which was characterised by good sense, clearness of style and diction, and practical applicability. Our Dublin correspondent writes: "The universal consensus of medical opinion declares that the death of 'Jack' Murphy has left a blank in the ranks of his profession and in general Dublin society which will not be adequately filled in the current generation. He made a social record which should surely be remembered in the history of 'the land of unrest.' When Archbishop Walsh attained his present position some 25 years ago his former Maynooth contemporary gave a commemorative dinner, and seated on the Archbishop's right hand was the late Rev. Samuel Haughton, the redoubtable champion of Trinity College!"

GEORGE FARQUHAR DAVIDSON, M.B., C.M. ABERD.

Dr. G. F. Davidson died suddenly at his residence, Gadie Cottage, Oyne, Aberdeenshire, on Tuesday night, Jan. 19th. Dr. Davidson was a native of Old Deer and took the usual medical course at the University of Aberdeen, and after graduation held important appointments in Egypt and in Australia. On his health giving way he returned to Aberdeen and after some time was able to take up practice in that city, where he remained until ill-health forced him to retire about five years ago. A large part of his leisure was given up to the study of literature and he went in extensively for the cultivation of roses. Dr. Davidson was unmarried and is survived by one brother and three sisters, for whom much sympathy is felt.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Ruegenberg of Bonn, member of the Imperial and Prussian Parliaments. Politically he belonged to the Central Party, but his energy was more particularly devoted to medical and sanitary questions.—Dr. Patzschko, sanitary councillor of Osterfeld.

Medical News.

UNIVERSITY OF CAMBRIDGE.—Mr. H. Scott, B.A., Trinity College, has been appointed Curator in Zoology in place of Dr. Sharp, M.A., F.R.S., who has resigned.—The following degrees were conferred on Jan. 28th:—

M.D.—H. H. Clarke, H. H. Dale, and H. Rischbieth, Trinity.
M.B.—G. F. Greenwood, Sidney Sussex.
B.C.—H. B. Elton and W. W. Treves, Gonville and Caius; and A. E. M. Woolf, Emmanuel.

The third examination for medical and surgical degrees, Part II., in the Easter term, will in future begin on the last Tuesday but one before the end of term. In 1909 the examination will begin on Tuesday, June 15th.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Theodor Brugsch has been recognised as *privat-docent* of Medicine.—*Berne:* Dr. K. Arndt, *privat-docent* of Surgery, has been granted the title of Professor.—*Freiburg:* Dr. von Eicken, *privat-docent* of Laryngology, has been granted the title of Extraordinary Professor.—*Kiel:* Dr. Ottomar Hoehne, *privat-docent* of Midwifery and Gynæcology, has been granted the title of Professor.—*Lausanne:* Dr. S. Eperon, *privat-docent* of Ophthalmology, has been promoted to an Extraordinary Professorship.—*Leipsic:* Dr. Erwin Nissl von Mayendorf has been recognised as *privat-docent* of Mental Diseases.—*Lemberg:* Dr. Johann Pruszynski has been recognised as *privat-docent* of Pharmacology.—*Leyden:* Dr. J. H. Zaijer has been recognised as *privat-docent* of Urology.—*Naples:* Dr. Francesco Galdi of Padua has been recognised as *privat-docent* of Medical Pathology.—*Pavia:* Dr. Giovanni Batista Sigurtà has been recognised as *privat-docent* of Urology.

EIGHTH ANNUAL MEETING OF THE PECKHAM NURSING ASSOCIATION.—The Mayor of Camberwell presided at the annual business meeting of the Peckham Nursing Association on Jan. 28th, at Hanover Hall, Hanover Park, S.E., when, in spite of the dense fog prevailing, there was a very fair attendance of friends and supporters of the association. The object of the work is to render professional nursing aid free to the afflicted poor in their own homes and to attend cases of sickness and operations among the middle classes for a moderate fee. The report and several of the speakers made emphatic reference to this latter feature, and pointed out that every effort was made to help people struggling to maintain independence in spite of increasing sickness and infirmities and decreasing income. Mr. Charles Ward, the assistant treasurer, who presented the accounts, said that the Metropolitan Hospital Sunday Fund had granted a small sum to the association.

THE SCOTTISH POOR-LAW MEDICAL OFFICERS' ASSOCIATION.—This association held its annual meeting in Glasgow on Jan. 29th. The chief business done was the alteration of certain of the rules. The association thereby decided to restrict its membership to acting Poor-law medical officers; former Poor-law medical officers are to be in future only eligible for honorary membership. The office of honorary president has been abolished and in future a requisition to call a special meeting of the association must be signed by 12 members instead of six as formerly. The financial position of the association remains satisfactory, a balance of £142 being reported. The annual report, which gives instances of advice and assistance rendered to members by the association during the past year, was adopted. An

interesting feature of the meeting was the presentation by the members of the association of a handsome gold watch, suitably inscribed, to the treasurer, Dr. Matthew Martin, in recognition of his services to the association since its formation.

ROYAL MATERNITY CHARITY OF LONDON.—The annual general meeting of the governors of this charity will be held at "The Hospiz," 28, Finsbury-square, E.C., on Tuesday, Feb. 9th, at 3.30 P.M. precisely.

DONATIONS AND BEQUESTS.—Mr. John Rowntree, shipowner, North Shields, who died on Dec. 12th last, aged 91 years, bequeathed £1000 to the Tynemouth Victoria Jubilee Infirmary, £250 to the North Shields Dispensary, and £250 to the Indigent Sick Society, North Shields.

UNIVERSITY OF OXFORD.—Competitions for scholarships in natural science are announced to take place as follows: March 9th, Keble College; March 16th, Merton, Exeter, and New Colleges; and June 29th, Brasenose College.—The degree of B.M., B.Ch., has been conferred on Cyril D. H. Corbett, University College.

BRIGHTON THROAT AND EAR HOSPITAL.—At the annual meeting of the governors of this hospital held on Jan. 30th, with the Mayor of Brighton in the chair, it was announced that the number of in-patients in 1908 was 335 and the number of out-patients 1575. The total receipts on the general funds were £1064 and the total expenditure was £1035.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.—H.R.H. the Princess of Wales has kindly consented to receive purses for the National Hospital for the Paralysed and Epileptic some time during the autumn. These purses will be for the Jubilee Fund, for which over 500 collections are being made throughout the country, some by former patients and pensioners of the hospital. The Duchess of Albany is president of the Executive Jubilee Committee, which hopes to raise £80,000. A portion of this sum will be devoted to an extension of premises, the building of which began a few days ago.

THE CONSUMPTION OF DRINK AND TOBACCO IN CANADA.—The report of the Excise Division of the Inland Revenue Department of Canada for the fiscal year 1907-08 shows that the production and consumption of alcoholic beverages continues to grow in Canada, although to a certain extent not all the spirits are consumed in the form of beverages, some being used in the industrial arts and in the preparation of medicines. The greater part of the alcohol produced from grain or molasses is intended, however, for beverages. In Canada last year the new output of the distillers was the record figure of 6,849,763 proof gallons, there being consumed in the process 7,679,000 pounds of malt, 72,997,000 pounds of Indian corn, 14,921,000 pounds of rye, 3,117,000 pounds of wheat, 395,000 pounds of oats, and 17,212,000 pounds of molasses. In the matter of production Ontario is the great whisky province of Canada, as it has within its bounds seven of the twelve distilleries in Canada. The increased production in spirits is small compared with the growth in the output of beer. This has to be measured, so far as the returns go, by the increase in the production of malt. In 1903–04 the amount manufactured was 68,503,000 pounds; last year it was 99,577,000 pounds. Many regard this increase in the production of malt liquor as, in a sense, a temperance movement, and they have some reason, inasmuch as less harm follows drinking beer than drinking spirits. When the back records are gone over the change in this respect is striking. The tables show that since 1869 the consumption of spirits, home-made and imported, has fallen from 1·124 gallons a head to 0·889 of a gallon a head, the decline being practically a bottle a head a year. In the same time the quantity of beer consumed has risen from 2·290 gallons a head to 5·812 a head of the population. As for wines, they hardly figure in the Canadian drink bill, the consumption being 0·096 of a gallon, or less than a pint a head for the population last year. The man who smokes has also to pay heavily for his quiet indulgence. Last year the customs and excise duties on tobacco amounted to $1.129 a head of the population. They were hardly 64 cents a head in 1896, the increase being due more to the rise in taxation. There were 32,088,000 pounds of tobacco taken for consumption. There were also taken for consumption 200,133,000 cigars and 385,000,000 cigarettes. The cigarette is apparently rapidly becoming the favourite form of using tobacco in Canada.

COLD STORAGE.—"Some Scientific Problems in the Preservation of Food by Artificial Refrigeration" is the subject of a paper to be read before the Cold Storage and Ice Association on Tuesday next, Feb. 9th, at the Royal Society of Arts, John-street, Adelphi, at 7.30 P.M., by Mr. C. J. Tabor. Non-members who are interested in the subject are invited to attend. Some of the questions to be dealt with by Mr. Tabor are those of bone taint, the effect of refrigeration on the fat cells of fish, on poultry, and on goods stored in a bad condition, as well as on the varying temperatures of ice, and on manufactured *v.* natural ice.

KING'S COLLEGE (UNIVERSITY OF LONDON).—Dr. F. W. Mott, F.R.S., Fullerian Professor of Physiology, Royal Institution, pathologist to the London County Asylums, will deliver two lectures in the physiological laboratory, King's College, London, on Mondays, Feb. 8th and 15th, at 4.30 P.M., on the Evolution of the Functions of the Human Brain. These lectures are free to all students and members of King's College, London, to all students of medical schools in London, to all internal students of the University of London, and to medical practitioners on presentation of their cards. The course of lectures by Professor Brodie on the Secretion of Urine, announced for this term, is postponed until June.

THE MEDICAL INSPECTION OF SCHOOL CHILDREN IN CHELMSFORD.—Mr. H. W. Newton, medical officer of health and school medical officer of Chelmsford, has issued his first annual report in the latter capacity. The chief point which he makes is that to render the inspection of school children ot any real value to the nation education authorities must make an arrangement for the treatment of the defects discovered. He considers the bare record of such defects to be a small part only of the authority's duty. Mr. Newton records that the great majority of parents have done little or nothing to secure the requisite treatment for their children either because of want of care or want of means, the latter factor being by far the most important. Turning to the sanitary conditions of individual schools, in no instance did he find any provision except the schoolroom stove for drying wet clothes and boots; the types of desk in many class-rooms were old-fashioned and faulty, and the washing arrangements were often inadequate. Mr. Newton comments strongly upon the absence of baths, as he found not a few children in a very dirty state. He advises the institution of a bathroom in each school and adjoining it a proper room in which the medical inspection can be carried out efficiently. His report calls attention to a most unsatisfactory state of affairs at present, for in some instances the inspection has had to be done in cloak-rooms and in one case on a landing. He acknowledges that this work would have been impossible but for the willing assistance of teachers and urges the education authority to give effect to his recommendation to appoint a school nurse, a request which has hitherto been ignored. Commenting upon the rule of acquainting parents with the time of the intended examination of their children, he remarks that only a few obey the request to attend at that time, but that children are sometimes sent to school abnormally clean and tidy in consequence, thus defeating one of the objects of inspection. Mr. Newton advises the close cropping of the hair of all elementary school children as a prophylaxis against ringworm. The report is carefully prepared and raises several important questions which all education authorities will have to consider.

BOOKS, ETC., RECEIVED.

AKADEMISCHE VERLAGSGESELLSCHAFT, m.b.H., Leipzig.
Grundzüge der Allgemeinen Pathologischen Histologie. Von Dr. Julius Steinhaus. Price, brosch, M.10.; geb., M.11.

ASSOCIATED PORTLAND CEMENT MANUFACTURERS (1900), LIMITED, London.
The Everyday Uses of Portland Cement. Price 2*s.* 6*d.* net.

BERGMANN, J. F., Wiesbaden.
Der Idealismus als lebenerhaltendes Prinzip. Betrachtungen eines Arztes. Von Prof. Dr. Alexander Jarotzky. Price not stated.

CASSELL AND CO., LIMITED, London, New York, Toronto, and Melbourne.

Health and Common Sense. By Woods Hutchinson, M.A., M.D. Price 6s. net.

CAXTON PUBLISHING CO., London.

The Edinburgh Stereoscopic Atlas of Obstetrics. Edited by G. F. Barbour Simpson, M.D., F.R.C.P.E., F.R.C.S.E., F.R.S.E., and Edward Burnet, B.A., M.B., Ch.B., B.Sc. With a Preface by Sir J. Halliday Croom, M.D., F.R.C.P.E., F.R.C.S.E., F.R.S.E. In Four Sections. Section III. Price not stated.

CHAPMAN AND HALL, LIMITED, London.

What is Life? Or Where are we? What are we? Whence did we come? and Whither do we go? By Frederick Hovenden, F.L.S., F.G.S., F.R.M.S. Third edition, revised, with Appendix. Price 6s.

CHURCHILL, J. AND A., London.

Guy's Hospital Reports. Edited by F. J. Steward, M.S., and Herbert French, M.D. Vol. LXII., being Vol. XLVII. of the Third Series. Price not stated.

The Practice of Medicine. By the late M. Charteris, M.D. Ninth edition. Edited by F. J. Charteris, M.D. Price 9s. 6d. net.

DEUTICKE, FRANZ, Leipzig und Wien.

Das Pappatacifieber. Ein endemisches Drei-Tage-Fieber im Adriatischen Küstengebiete Österreich-Ungarns. Von Privatdozent Dr. R. Doerr, Dr. K. Franz und Dr. S. Taussig. Price M.4.

DOIN, OCTAVE, ET FILS, Paris.

Les Fractures du Coude chez l'Enfant. Par les Docteurs Destot, Vignard et Barlatier. Price Fr.6.

FISCHER, GUSTAV, Jena.

Klinische Beiträge zur Lehre von der Hysterie nach Beobachtungen aus dem Nordwesten Russlands. Von Dr. Georg Voss. Price M.6.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

The Oxford Medical Publications. The Principles of Pathology. Volume I. General Pathology. By J. George Adami, M.A., M.D., LL.D., F.R.S. Price 30s. net.

A System of Medicine. Edited by William Osler, M.D., F.R.S., assisted by Thomas McCrae, M.D., F.R.C.P. Lond. Vol. V. Diseases of the Alimentary Tract. Price 30s. net.

GLAISHER, HENRY J., London.

Soured Milk and Pure Cultures of Lactic Acid Bacilli in the Treatment of Disease. By George Herschell, M.D. Lond. Second impression, ninth thousand. Price 1s. 6d. net.

GREEN, WILLIAM, AND SONS, Edinburgh and London.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Edited by J. W. Ballantyne, M.D., F.R.C.P.E. Vol. X. Thiersch—Zymotic. Price 15s. net.

HIRSCHWALD, AUGUST, Berlin.

Kriegschirurgische Rück- und Ausblicke vom asiatischen Kriegsschauplatze. Von Dr. Hermann Fischer. Price M.4.50.

Kongenitale Mitralstenose (Durozierscher Krankheit), Chlorose, Lungentuberkulose, in ihren Beziehungen zur schwachen Konstitution des Organismus. Von Dr. C. Pawlinow. Price not stated.

Tabellen zu klinisch-bakteriologischen Untersuchungen für Chirurgen und Gynäkologen nebst einer kurzen Anleitung zur Ausführung der "Dreitupferprobe." Von Dr. W. Liepmann. Price M.2.

König's Lehrbuch der Chirurgie für Aertze und Studierende. IV. Band. Allgemeine Chirurgie. Von Dr. Otto Hildebrand, Geh. Med.-Rat. Dritte neu bearbeitete Auflage. Price M.20.

LEHMANN, J. F., Leipzig.

Wandlungen der Medizin und des Aerztestandes in den letzten 50 Jahren. Rede gehalten von Obermedizinalrat Professor Dr. O. von Bollinger beim Antritt des Rektorats der Ludwig-Maximilians-Universität München am 28 November, 1908. Price M.1.

"LOCAL GOVERNMENT JOURNAL" Office, London.

The Local Government Annual and Official Directory, 1909. Edited by S. Edgecumbe Rogers. Price 1s. 6d.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

The Theory of Valency. By J. Newton Friend, Ph.D. Würz., M.Sc. Birmg. Price 5s.

MACMILLAN COMPANY, THE, New York. (MACMILLAN AND CO., LIMITED, London.)

Human Foods and Their Nutritive Value. By Harry Snyder, B.S. Price 5s. net.

METHUEN AND CO., London.

Outlines of Physical Chemistry. By George Senter, Ph.D., B.Sc. Lond. Price 3s. 6d.

NORTON AND CO., Madras.

Indian Plants and Drugs with their Medical Properties and Uses. Edited and published by K. M. Nadkarni, F.S.Sc.L.A. (London). Price not stated.

ROGERS, S. EDGECUMBE, London.

Departmental Decisions. By the Local Government Board, Board of Education, Home Office, Treasury. Local Government Legal Decisions. Quarterly Issue. No. 13. December, 1908. Price 2s.

RUDEVAL, F. R. DE, Paris.

Précis de Stomatologie. Par J. Redier. Tome Premier. Price Fr.9.

SANITARY PUBLISHING CO., LIMITED, London.

Modern Methods of Sewage Disposal. By W. H. Trentham and James Saunders. Price 2s. 6d. net.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.

Surgery, its Principles and Practice. By various Authors. Edited by William Williams Keen, M.D., LL.D., and John Chalmers Da Costa, M.D. Vol. IV. Price, cloth, 30s. net.

A Reference Hand-book of Gynecology for Nurses. By Catharine Macfarlane, M.D. Price 6s. net.

SWEET AND MAXWELL, LIMITED, London.

The Criminal Responsibility of Lunatics. A Study in Comparative Law. By Heinrich Oppenheimer, LL.D. Lond., M.D. Heidelberg. Price 10s. 6d.

WARD AND CO., London.

Photographic Optics and Colour Photography. By George Lindsay Johnson, M.A., M.D., B.S., F.R.C.S. Price not stated.

WILEY, JOHN, AND SONS, New York. (CHAPMAN AND HALL, LIMITED, London.)

Laboratory Notes on Industrial Water Analysis. A Survey Course for Engineers. By Ellen H. Richards. First edition. First Thousand. Price, cloth, 50 cents net (2s. net).

The Systematic Relationships of the Coccaceæ. With a Discussion of the Principles of Bacterial Classification. By Charles Edward Amory Winslow and Anne Rogers Winslow. First edition. First Thousand. Price, cloth, $2.50 (10s. 6d. net).

First Principles of Chemical Theory. By C. H. Mathewson, Ph.D. First edition. First Thousand. Price, cloth, $1.00 net (4s. 6d. net).

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. (SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London. WOOD, WILLIAM, AND CO., New York).

An Index of Treatment. By various Writers. Edited by Robert Hutchison, M.D., F.R.C.P., and H. Stansfield Collier, F.R.C.S. Fourth edition. Price 21s.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALLISON, T. M., M.D., B.S. Durh., has been appointed Honorary Assistant Physician to the Royal Victoria Infirmary, Newcastle-on-Tyne.

GORDON, J. E., M.D. Edin., has been appointed Medical Superintendent of the Devon and Cornwall Sanatorium.

MYLER, JOHN WILLIAM GLENTON, M.D. Brux., F.R.C.S. Eng., L.R.C.P. Lond., D.P.H. Lond., has been appointed Medical Inspector of Schools by the Rhondda (Glamorganshire) Education Committee.

WHITEHORNE-COLE, A. G., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Clinical Assistant to St. Mark's Hospital for Fistula and other Diseases of the Rectum, City-road, E.C.

YOUNG, JAMES, M.D., C.M. Glasg., has been appointed Physician to the Handel Cossham Memorial Hospital, Bristol.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AUSTRALIA, LUNATIC ASYLUM, Toowoomba.—Assistant Medical Superintendent. Salary £400 per annum, with quarters, fuel, and light.

BATH, ROYAL UNITED HOSPITAL.—House Physician. Salary £80 per annum, with board, lodging, and washing.

BRIXTON DISPENSARY.—Resident Medical Officer, unmarried. Salary £150 per annum, with apartments, coal, and gas.

CHELTENHAM GENERAL HOSPITAL.—Surgeon-in-Charge of the Branch Dispensary. Salary £80 per annum, with board and lodging.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £50 per annum, with board, residence, washing, &c.

DERBY COUNTY ASYLUM, Mickleover.—Junior Assistant Medical Officer. Salary £120 per annum, with apartments, board, washing, and attendance.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £50 per annum, with board, lodging, and laundry.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, attendance, and washing.

DURHAM COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary £150 per annum, with board, laundry, and attendance.

GAIRLOCH, SOUTHERN DIVISION OF THE PARISH.—Medical Officer. Salary at rate of £150 per annum.

HALIFAX, ROYAL HALIFAX INFIRMARY.—Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

KING'S COLLEGE HOSPITAL.—Assistant Clinical Pathologist.

LEEDS GENERAL INFIRMARY.—Ophthalmic House Surgeon. Board, lodging, and washing provided.

LEICESTER INFIRMARY.—Assistant House Surgeon. Salary at rate of £60 per annum, with board, apartments, and washing.

LONDON HOSPITAL, Whitechapel, E.—Medical Registrar. Salary £100 per annum.

LONDON LOCK HOSPITAL.—House Surgeon in the Female Hospital. Salary £100 per annum, with board, lodging, and laundry.

MANCHESTER, ANCOATS HOSPITAL.—Resident House Surgeon. Salary £100 per annum, with board, &c. Also Third Resident Assistant House Surgeon. Salary £70 per annum, with board, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, London, W.C.—Medical Superintendent. Salary £100 per annum.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Honorary Surgeon.

MORPETH, NORTHUMBERLAND COUNTY ASYLUM.—Junior Assistant Medical Officer (female). Salary £120 per annum, with board, apartments, laundry, and attendance.

NATIONAL HOSPITAL FOR THE RELIEF AND CURE OF THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury.—Assistant Physician.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—House Physician for six months. Salary at rate of £80 per annum, with board, &c. Also Junior House Surgeon for six months. Salary at rate of £40 per annum, with board, &c.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Physician for six months. Salary at rate of £50 per annum, with board, residence, and laundry.

ROXBURGH DISTRICT ASYLUM, Melrose.—Assistant Medical Officer. Salary £150 per annum, with board, rooms, and washing.

ROYAL NAVAL MEDICAL SERVICE.—Examination for 15 Commissions.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, with all found.

ST. MARYLEBONE, PARISH OF.—District Medical Officer. Also Visiting Medical Officer. Salary in each case £200 per annum.

SAINT PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road.—Resident Medical Officer. Salary £100 per annum, with residence and attendance.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing. Also Assistant Surgeon.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board and lodging.

WAKEFIELD, WEST RIDING ASYLUM.—Pathologist and Assistant Medical Officer. Salary £250 per annum, with board, apartments, and attendance.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Assistant Anæsthetist. Also Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry allowance provided.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Honorary Ophthalmic Surgeon.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Newport, in the county of Monmouth; and at Callington, in the county of Cornwall.

Births, Marriages, and Deaths.

BIRTHS.

HACKNEY.—On Jan. 31st, at High-street, Hythe, Kent, the wife of Clifford Hackney, M.R.C.S., of a son.

WILLCOX.—On Feb. 1st, at Hoveden-road, Cricklewood, N.W., the wife of W. H. Willcox, M.D., of a son.

DEATHS.

BUCKELL.—On Jan. 24th, at Clan Conal, Lee-on-the-Solent Leonard Martin Buckell, F.R.C.S., aged 56 years

READ.—On Jan. 28th, suddenly, at 11, Petersham-terrace S.W., Thomas Lawrence Read, M.R.C.S., aged 76 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE RESUSCITATION OF THE APPARENTLY DROWNED.

WE have recorded that the Metropolitan Police, who have until recently been instructed in the Silvester method for the resuscitation of the apparently drowned, are in future to learn the Schäfer method which has been recommended as superior by a committee of the Royal Society of Medicine. A chart has been forwarded to us giving clear and concise rules for the application of the new method, illustrated by figures showing the various positions adopted by the rescuer. Great stress is laid on the fact that the compression and relaxation of the lower part of the thorax should be commenced immediately the body is recovered, no time being wasted on removing clothing or applying stimulants. The chart is issued from Scotland Yard for the use of the police force.

OPHTHALMOLOGICAL OPTICS.

To the Editor of THE LANCET.

SIR,—In answer to your correspondent "B. F.," an ellipsoid of revolution is described by the revolution of an ellipse about either axis. The careful investigations of Sulzer have shown that most corneæ have no axis of symmetry, so that the old view that the corneal curvature is elliptical must be abandoned. Hence it follows that the angle α, which represented the angle formed by the major axis of the corneal ellipse with the visual line (i.e., the line joining the point of fixation with the anterior nodal point), has now no real significance. The centre of rotation of the emmetropic eye lies from 10·42 to 11·77 mm. behind the anterior surface of the cornea (Donders and Doijer). The length of the emmetropic eye from the anterior surface of the cornea to the surface of the retina (second principal focus) varies from 22·25 to 26·24 mm. (Mauthner, confirmed by the actual measurements of Schnabel and Herrnheiser). The variations are due chiefly to variations in the corneal curvature and in less degree to variations in the curvatures of the surfaces and in the position of the lens. The exact position of the centre of rotation of an eye measuring 22·8 mm. from the cornea to the second principal focus could only be determined by direct measurement with the ophthalmometer.

I am, Sir, yours faithfully,

Feb. 1st, 1909. CONICS.

NURSING ASSOCIATIONS.

A CORRESPONDENT writes to us as follows:—"There is a nurse in this town acting under a committee of ladies who charges the patients threepence a visit, and also makes a charge for dressings. Confinements are charged at the rate of a guinea. Is this practice legal and does it not become 'unqualified practice'? ..... Some of the better class people take undue advantage of this means of obtaining medical attendance, although the nursing association was originally started for the poor only."

We regret to have to inform our correspondent that unqualified practice is quite legal. If the nurse in question "habitually and for gain attends women in childbirth otherwise than under the direction of a qualified medical practitioner" without being certified under the Midwives Act of 1902, or has pretended to be on the Medical Register, she is liable to prosecution, but not otherwise..

Francis.—It seems to us that it ought to be possible to register movements of the thorax in catalepsy by means of Burdon-Sanderson's stethometer or Marey's pneumograph. We are not sure whether it is possible to register the passage of air through the mouth or nostrils in such a case.

Troubled.—Our correspondent seems to have done everything that was necessary for the welfare of the patient. He called in a medical man and obeyed the orders given. Patients of that age suffering from the disease in question very often suddenly relapse and die without much warning.

Mr. M. Thompson Walker.—If our correspondent will forward us a specimen of the preparation in question we will investigate the matter.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received:—*Sutherland Daily Echo, Ardrossan and Saltcoats Herald, Natal Witness, Dewsbury District News, Surrey Advertiser, Dundee Advertiser, Surrey Times, Nottingham Guardian, Manchester Guardian, Birmingham Post, St. James's Gazette, Stockport Advertiser, Burton Mail, Hertfordshire Mercury, Edinburgh Evening News, Morning Post, Scotsman, Belfast Evening Telegraph, &c.*

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

SURGICAL SECTION (Hon. Secretaries—Herbert F. Waterhouse, Walter G. Spencer): at 5.30 P.M.

Papers:

Mr. J. F. Dobson and Mr. J. Kay Jamieson: The Lymphatics of the Colon.

Mr. Rickman J. Godlee: The Torus Palatinus.

WEDNESDAY.

MEDICAL SECTION (Hon. Secretaries—Herbert P. Hawkins, A. M. Gossage): at 5.30 P.M.

Discussion:

On Ulcerative Colitis (adjourned from Jan. 26th) will be continued by Sir Patrick Manson.

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—H. Beckett-Overy, William J. Gow): at 7.45 P.M.

Specimens:

Dr. Herbert Spencer: A Venous Aneurysm on a Uterine Fibroid.

Mrs. Stanley Boyd: A Necrobiotic Fibroid.

Dr. Victor Bonney: A Modification of "de Bibes Bag."

Dr. F. E. Taylor: A Uterus with Two Interstitial Fibroids; one showing Red Degeneration, the other Normal.

Dr. Drummond Maxwell: Notes on a Case of Toxic Vomiting and Pregnancy.

Short Communications:

Dr. F. J. McCann: Sarcoma of the Fallopian Tubes.

Dr. Russell Andrews: Some Cases of Vesicular Mole in Combination with Ovarian Cysts, together with Cases Recorded.

Paper:

Dr. G. F. Blacker: A Case of Hydatiform Mole with Albuminuria of Kidney and Pregnancy; Sudden Death from Cardiac Failure.

FRIDAY.

CLINICAL SECTION (Hon. Secretaries: Raymond Johnson, H. D. Rolleston): at 8 P.M.

Cases:

Dr. H. Morley Fletcher: Cases of Oxycephaly.

Dr. Herbert P. Hawkins: Case of Leprosy.

Mr. W. Sampson Handley: Elephantiasis treated by Lymph-angioplasty.

Mr. P. M. Heath: (1) Diffuse Periostitis of both Tibiæ without Other Evidence of Congenital Syphilis; (2) Congenital Syphilitic Knee.

Dr. F. Parkes Weber: (1) Congenital Swelling of the Hands (Trophœdema); Congenital Splenomegaly and Scholuric Jaundice.

Dr. F. J. Poynton: Amaurotic Family Idiocy.

Dr. M. Macnaughton-Jones, jun.: An Automatic Appliance for Maintaining Pressure in carrying out Bier's Treatment.

Mr. R. Higham Cooper: Acromegaly with Unusual Bone Changes.

(At 8.30 P.M.) Mr. Butlin will Exhibit his Collection of Drawings of Early Carcinoma of the Tongue and of Conditions which may be Mistaken for it; and will speak of the Results of Operations which have been practised in the cases exhibited. Microscopic sections of the cases will be on view.

(At 9.40 P.M.) Mr. R. J. Godlee will describe a Case of Dermoid Cyst of the Mediastinum treated by Operation, and will illustrate the subject of this operation by a Pathological Specimen from another case.

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—9 P.M., Clinical Evening. Cases will be in attendance at 8 P.M.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury-square, W.C.

TUESDAY.—8 P.M., Mr. W. A. H. Naylor: On the Determination of Glycerine.—Mr. H. Finnemore: Note on a False Bark offered as Prunus Serotina.—Mr. E. M. Holmes: The Identification of a False Bark of Prunus Serotina.

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Millbank, S.W.

WEDNESDAY.—5 P.M., Clinical Demonstrations.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Clinical Evening. Cases, etc., will be shown by Mr. N. B. Harman, Mr. A. Levy, Mr. J. F. Cunningham, and Mr. E. Nettleship.

CHILD STUDY SOCIETY LONDON, Parkes Museum, Margaret-street, W.

THURSDAY.—8 P.M., Causerie: Reception of American Teachers.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY.—12 (noon), Prof. Shattock: Osteoplastic Inflammation of Bone (Museum Demonstration.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. Galloway: Clinique (Skin). 5.15 P.M., Lecture: Dr. P. Stewart: Trigeminal Neuralgia and its Treatment by Schlosser's Method.

TUESDAY.—4 P.M., Dr. H. Mackenzie: Clinique (Medical). 5.15 P.M., Lecture:—Mr. E. M. Corner: The Diagnosis and Treatment of Pus Formation in Appendicitis.

WEDNESDAY.—4 P.M., Mr. P. J. Freyer: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. G. Little: Treatment of Psoriasis.

THURSDAY.—4 P.M., Mr. J. Clarke: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. L. Bidwell: Perforating Ulcer of the Colon.

FRIDAY.—4 P.M., Mr. W. Stuart-Low: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Lecture:—Dr. Low: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Clinical Lecture:—Mr. Li. Williams: Diagnosis of Swellings of the Jaws; Principles of Treatment. In Children.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: Diagnostic Signs in Organic Disease of the Nervous System—The Spinal Cord.

WEDNESDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Diseases of the Eyes. 2.30 P.M., Operations. Dr. D. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Medicine.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Dr. Dunn: Cases of Eye Diseases.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Lecture: Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Abraham: Cases of Skin Disease.

SATURDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Diseases of the Eyes. 2.30 P.M., Operations. Dr. D. Robinson: Diseases of Women.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson); X Rays. 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations (Mr. Carson). Clinics:—Surgical Out-patient (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 P.M., Dr. G. P. Chappel: Special Demonstration of Medical Cases.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. H. W. Carson); X Rays. 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lantern-Lecture:—Mr. H. Evans: Applied Anatomy of the Breast: Diseases of the Male Breast.

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Operations (Mr. W. Edmunds). Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth: Medicine. 3.15 P.M., Mr. Turner: Surgery. 4 P.M., Mr. Lawrence: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 3.30 P.M., Special Lecture: Mr. Cargill: Orbital Cellulitis.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 2.30 P.M., Special Lecture: Dr. Rankin: Jaundice.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—Clinical Lecture:—Dr. Taylor: Treatment in Nervous Diseases.

FRIDAY.—Clinical Lecture:—Dr. Russell: The Significance o Tremor.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Treatment, Constitutional and Local, in all its Forms.

BRITISH MEDICAL BENEVOLENT FUND, Library of the Royal College of Physicians.

TUESDAY.—5 P.M., Addresses by the Lord Bishop of Oxford, the Lord Mayor of London, and others. Sir John Tweedy in the chair.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—Lecture:—Mr. G. French: Tracheoscopy.
FRIDAY.—Lecture:—Dr. W. Wingrave: Clinical Pathology.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

TUESDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (10th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (11th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (13th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospital operations are performed daily.

EDITORIAL NOTICES

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1908, which was completed with the issue of Dec. 26th, were given in THE LANCET of Jan. 2nd, 1909.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1908 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 4th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 29	30·20	S.E.	...	52	45	28	...	31	Foggy
,, 30	30·03	N.	...	61	42	31	37	39	Cloudy
,, 31	29·98	W.	...	51	39	32	36	38	Cloudy
Feb. 1	29·85	N.W.	0·04	52	45	38	40	42	Cloudy
,, 2	30·16	W.	...	56	51	34	34	35	Cloudy
,, 3	29·84	W.	...	65	55	35	48	51	Cloudy
,, 4	29·84	W.	...	58	55	51	50	53	Fine

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